HEARING ON TRADE ASPECTS OF CLIMATE CHANGE LEGISLATION

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BEFORE THE

SUBCOMMITTEE ON TRADE

OF THE

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U.S. HOUSE OF REPRESENTATIVES

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HEARING ON TRADE ASPECTS OF CLIMATE CHANGE LEGISLATION

TUESDAY, MARCH 24, 2009

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON WAYS AND MEANS,
SUBCOMMITTEE ON OVERSIGHT,
Washington, DC.

The Subcommittee met, pursuant to call, at 2:15 p.m., in room 1100, Longworth House Office Building, the Honorable Sander M. Levin (Chairman of the Subcommittee) presiding.

[The advisory announcing the hearing follows:]

ADVISORY

FROM THE COMMITTEE ON WAYS AND MEANS

SUBCOMMITTEE ON TRADE

FOR IMMEDIATE RELEASE
March 17, 2009
TR–1

CONTACT: (202) 225–6649

Chairman Levin Announces Hearing on Trade Aspects of Climate Change Legislation

House Ways and Means Committee Trade Subcommittee Chairman Sander M. Levin today announced that the Committee on Ways and Means Subcommittee on Trade will continue the full Committee's work on climate change legislation by holding a hearing on the trade aspects of climate change legislation. **The hearing will take place on Tuesday, March 24, 2009, in 1100 Longworth House Office Building, beginning at 2:00 p.m.**

In view of the limited time available to hear witnesses, oral testimony at this hearing will be from invited witnesses only. However, any individual or organization not scheduled for an oral appearance may submit a written statement for consideration by the Subcommittee and for inclusion in the printed record of the hearing. A list of invited witnesses will follow.

BACKGROUND:

During the 110th Congress, the Committee on Ways and Means began a series of hearings on climate change. In the first hearing, the Committee heard testimony that human greenhouse gas emissions are having an adverse impact on our planet's climate. In the second hearing, the Committee heard testimony from numerous witnesses recommending that Congress implement revenue measures (e.g., auction-based cap-and-trade proposals or carbon taxes) that would reduce human greenhouse gas emissions. In connection with the development of these revenue measures, witnesses at this hearing also encouraged the Committee to (1) promote a comprehensive global effort to address climate change and to ensure a level regulatory playing field for U.S. manufacturers, (2) mitigate higher energy costs borne by consumers, (3) maximize the impact that climate change legislation will have on growing the U.S. economy, and (4) maintain the competitiveness of U.S. businesses, farmers and workers.

During the 111th Congress, the Committee continued this series of hearings, by holding a hearing on the scientific objectives of climate change legislation. This hearing provided a scientific discussion of the goals that climate change legislation should seek to achieve over both the short term and the long term. In connection with the goals of climate change legislation, the witnesses suggested different approaches to meeting those goals (e.g., cap-and-trade, cap-and-invest, carbon tax) and discussed the need for international cooperation in order to achieve these goals. In addition, the Subcommittee on Income Security and Family Support also held a hearing on March 12, 2009, on protecting low- and moderate-income families while curbing global warming.

In announcing this hearing, Chairman Levin said, **"Climate change legislation will be a priority for consideration by the Ways and Means Committee during the 111th Congress. As the Committee works on legislation to achieve our environmental goal of reducing carbon emissions, such legislation must contain provisions to ensure that U.S. businesses, farmers, and workers remain competitive until a global climate change agreement comes into ef-**

fect. Moreover, we need to ensure that any actions undertaken by the United States are consistent with our international obligations."

FOCUS OF THE HEARING:

The hearing will focus on a discussion of the trade aspects of climate change legislation including how to minimize carbon leakage and maintain U.S. competitiveness.

DETAILS FOR SUBMISSION OF WRITTEN COMMENTS:

Please Note: Any person(s) and/or organization(s) wishing to submit for the hearing record must follow the appropriate link on the hearing page of the Committee website and complete the informational forms. From the Committee homepage, http://waysandmeans.house.gov, select "*Committee Hearings*". Select the hearing for which you would like to submit, and click on the link entitled, "*Click here to provide a submission for the record.*" Once you have followed the online instructions, complete all informational forms and click "submit" on the final page. ***ATTACH*** your submission as a Word or WordPerfect document, in compliance with the formatting requirements listed below, by close of business **Tuesday, April 7, 2009**. Finally, please note that due to the change in House mail policy, the U.S. Capitol Police will refuse sealed-package deliveries to all House Office Buildings. For questions, or if you encounter technical problems, please call (202) 225–1721.

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The Committee relies on electronic submissions for printing the official hearing record. As always, submissions will be included in the record according to the discretion of the Committee. The Committee will not alter the content of your submission, but we reserve the right to format it according to our guidelines. Any submission provided to the Committee by a witness, any supplementary materials submitted for the printed record, and any written comments in response to a request for written comments must conform to the guidelines listed below. Any submission or supplementary item not in compliance with these guidelines will not be printed, but will be maintained in the Committee files for review and use by the Committee.

1. All submissions and supplementary materials must be provided in Word or WordPerfect format and MUST NOT exceed a total of 10 pages, including attachments. Witnesses and submitters are advised that the Committee relies on electronic submissions for printing the official hearing record.

2. Copies of whole documents submitted as exhibit material will not be accepted for printing. Instead, exhibit material should be referenced and quoted or paraphrased. All exhibit material not meeting these specifications will be maintained in the Committee files for review and use by the Committee.

3. All submissions must include a list of all clients, persons, and/or organizations on whose behalf the witness appears. A supplemental sheet must accompany each submission listing the name, company, address, telephone, and fax numbers of each witness.

The Committee seeks to make its facilities accessible to persons with disabilities. If you are in need of special accommodations, please call 202–225–1721 or 202–226–3411 TTD/TTY in advance of the event (four business days notice is requested). Questions with regard to special accommodation needs in general (including availability of Committee materials in alternative formats) may be directed to the Committee as noted above.

Note: All Committee advisories and news releases are available on the World Wide Web at http://waysandmeans.house.gov.

Chairman LEVIN. The Committee will come toward to order.

We have had a chance to have an informal couple of minutes together and now we will start the formal hearing. I think you all know the rules. We will put all of your statements into the record, and we will ask you if you can to summarize your statement, however you want to handle it, in 5 minutes. The lights will work presumably, and we will also try to live within the 5-minute rule. We always want to have some meaningful back and forth; so I will try to act accordingly in terms of our questions and answers.

This is the first of what will be, I think, a number of hearings on this vital issue, both in the Subcommittee and in the Full Committee. Indeed, there is a Full Committee hearing that is scheduled in just a few days, on Thursday, and that hearing will cover a broader swath of issues than we will today. But this is all a piece of an important and vital puzzle. In fact, my statement starts off with that strong thought or at least a thought strongly stated.

The world cannot wait as sceptics ignore science and deny the existence and the severe economic, social, and environmental threats of climate change. We can no longer afford to live in such a state of denial. The problem is real and the time to act is now. The clear fact is that we can and must tackle both the environmental and the economic challenges facing our country and our world today.

We need to find a solution to the climate change problem that preserves existing jobs while creating new green jobs. We do not want to pit the job of the steelworker against the job of the solar panel producer. I want to be able, and I think all of us do, to ensure that hardworking Americans are able to compete for both jobs.

While some deny the environmental crisis we face, others seem to deny our current economic crisis and to deem concerns that climate change legislation, if not done properly, could make a bad situation perhaps even worse. I am basically an internationalist and I know that globalization is here to stay. Because climate change is an international problem, climate change legislation must have an international component. It simply will not work to take action at home to reduce our own emissions of greenhouse gases while ignoring what is happening in other countries. If we regulate emissions and other nations do not, we run the risk that our environmental objectives will be defeated as polluters and pollution will merely migrate from the U.S. to countries with less stringent regulations, also taking U.S. jobs with them. This is the so-called carbon and job leakage problem. Before Congress would pass legislation, I think clearly it must address this fundamental issue.

Climate change legislation should not make products manufactured in the U.S. any more competitive or any less competitive than they were before the enactment of that legislation, and I emphasize this, but legislative passivity will not work. We need some positive mechanisms to address these problems.

So as I said at the beginning, I hope the hearing will help us determine what that mechanism might be. Some believe the best way to address the carbon leakage issue is at the border, whether through import fees or permits. Others favor compensating the industries most affected by the increased cost and most vulnerable to international competition, either through free emission allowances or tax credits or rebates. Frankly, I think there is much work to be done before we are able to identify the right solution, whether it is on the table, a combination of proposals on the table, or something yet to be constructed.

So I look forward to this hearing. It is, as I said, one in a series of hearings. We are here to learn, are we not? We are here to learn, to inquire, to exchange with you, perhaps to exchange with each other, but I don't think there is any more important issue today that faces this particular subcommittee.

So it is my pleasure now to yield to you, Mr. Brady, our Ranking Member.

Mr. BRADY. Mr. Chairman, thank you. You have commented that the globe is smaller and more interconnected than ever and I couldn't agree more. In this era of increased globalization, the prosperity of American families is intricately linked to the global market, and therefore, America's prosperity is intricately linked to international competitiveness. Millions of American jobs depend upon international trade. Last year international trade contributed more to U.S. economic growth than any other factor. Expanded trade cushioned the blow our economy took from the collapse of the housing and credit markets. Exports have supported American jobs as domestic demand has declined. So if we seek a return to prosperity, it is not enough to merely buy American; we must sell American, sell American products and services throughout the world. And because of the importance of international trade to our economy, we must pursue policies that enhance the international competitiveness of American workers.

One way to do that is to pass expeditiously the three pending free trade agreements with Colombia, Panama, and South Korea. These agreements will add billions of dollars to U.S. exports and economic growth and support good-paying American jobs.

Mr. Chairman, I am ready to work with you, Chairman Rangel, and the Administration to address any concerns about these agreements and bring them to the floor of the House for a vote. And as part of that effort, I would encourage you to schedule a hearing on the three pending trade agreements as soon as possible. The Trade Subcommittee has not held a hearing on the free trade agreements in over 2 years, and in contrast the Foreign Affairs Committee has already held three hearings on the agreements in this Congress alone.

The topic of today's hearing, the impact of climate change legislation on U.S. competitiveness, is another issue that has garnered interest across the Congress. And while there are genuine and legitimate questions surrounding the science of global warming, and I urge Congress to consider them in-depth, for the sake of this hearing we will focus on the trade implications and impact on American jobs as a result of imposing a cap-and-trade system.

I am very concerned about the impact the hundreds of billions of dollars in new energy taxes included in the President's budget will have on America's international competitiveness. These energy taxes will raise costs for every family and business in America. The EPA has estimated that energy taxes from cap and trade like those proposed by the President would damage virtually every sector of the American economy and would be particularly devastating for American manufacturing. The higher cost imposed on American businesses would make them uncompetitive with the imports they compete against here and make American exports uncompetitive in the international market. The President's new energy taxes would create the ultimate in an unlevel playing field that would result in scores, actually millions, of Americans losing their jobs.

Energy Secretary Chu recently advocated establishing a carbon tariff against other countries, as have some Members of Congress. I have several concerns about these proposals. It appears that these tariffs or other charges on imports would further increase costs on American families and businesses, are unlikely to be effective in limiting the damage to import-competing industries, do nothing to assist U.S. exports, and could possibly start a global trade war. As proposed, U.S. trade measures alone would cover only a fraction of global trade and carbon-intensive goods, have limited impact on overall industrial carbon dioxide emissions, and fail to recognize that global demand will see the most growth in foreign markets in the years ahead.

Moreover, trade measures provide little leverage internationally given that the U.S. accounts for only 10 percent of global demand in the five carbon-intensive industries, the important share of which accounts for less than 3 percent, according to the recent report, Leveling the Carbon Playing Field, produced jointly by the Peterson Institute for International Economics and the World Resources Institute.

These trade barriers also would conflict with longstanding American bipartisan policies in regard to developing countries. Many of the same countries that we provide with access to the U.S. market through our preference programs could be subject to the new tariffs. In effect, we would be lowering tariffs on one hand and raising them right back up on the other, more than offsetting any preference benefits and leaving workers worse off in these developing countries.

Mr. Chairman, these are just some of the reasons why I am very concerned about the impact of climate change policies on America's international competitiveness. The Ways and Means Committee, and this Subcommittee in particular, must play a key role in this debate, and as such, I am anxious to hear from our witnesses today and to have a frank and honest discussion with you, Mr. Chairman, and other Members of the Committee because we must carefully consider the impact of the President's proposed energy taxes on America's international competitiveness.

I yield back.

Chairman LEVIN. Well, 5 minutes on the dot, Mr. Brady. You set an example.

As you can see, this is a lively subject, so let's punch in. I think what I will do is just a say a word about each of you and then you will go down the row.

Mr. John McMackin is with the Energy-Intensive Manufacturers' Working Group on Greenhouse Gas Regulation. Leo Gerard is the very distinguished International President of the United Steelworkers of America. David Hamilton is Director of Global Warming and Energy Programs for the well-known Sierra Club of this country. Professor Joost Pauwelyn is a Professor of International Law, the Graduate Institute of International and Development Studies, Geneva, Switzerland.

When we said hello, I didn't ask if you came especially for this hearing, but you have come a long way and so therefore if we might give a special welcome to you, sir.

Robert E. Clay is the CEO and chairman of the board of Directors of Pridgeon & Clay, Inc., which is in the great State of Michigan; so if I can put in that plug, and that is the last time I will do that for this hearing.

So Mr. McMackin, if you will start with yourself and go down for 5 minutes, and then we will take over and have some back and forth. Thank you.

STATEMENT OF JOHN J. MCMACKIN, THE ENERGY-INTENSIVE MANUFACTURERS' WORKING GROUP ON GREENHOUSE GAS REGULATION

Mr. MCMACKIN. Thank you, Mr. Chairman, Mr. Brady, Members of the subcommittee. It is an honor to be here. The Energy-Intensive Manufacturers' Working Group on Greenhouse Gas Regulation, on whose behalf I appear today, greatly appreciates this opportunity to testify on this difficult and critical issue. I am John McMackin, and in addition to being a partner in the law firm of Williams & Jensen, I am a director of Owens-Illinois. O–I, the largest glass container manufacturer in the world is headquartered in Perrysburg, Ohio, and has facilities in 11 States.

Our working group was formed early last year for a narrow but important purpose: to engage constructively with other stakeholders and Congress to attempt to solve what is often referred to as the "carbon leakage problem" but what is actually, as the chairman's comments indicated, a problem of the leakage both of carbon and of jobs.

Leakage is a problem that primarily affects energy-intensive industries that face foreign competition, the two factors that define our members. Our group is composed of companies in the U.S. industries that are widely and correctly seen as the most vulnerable to leakage: ferrous metals, iron and steel; nonferrous metals, aluminum and copper; cement, glass, including fiberglass, ceramics, chemicals, and paper. The companies include Alcoa, Corning, Dow, Holcim(US), NewPage Corporation, Nucor, Owens-Corning, Owens-Illinois, PPG, Rio Tinto, and U.S. Steel.

Of the several solutions that have been advanced so far to deal with the leakage problem, our group's work is focused exclusively on one—and it is the one solution that focuses on the source, the U.S. factory and its costs as opposed to the border, which is where all of the other mechanisms are focused.

There are various names for this solution, but we have taken to calling it an output-based rebate, which is the phrase first used to describe one of the prominent and promising versions that was featured in the Inslee-Doyle Carbon Leakage Prevention Act. Mr. Doggett included a version of this kind of relief in his bill, H.R. 6316, and we are very encouraged to learn that he is considering including in this year's version some of the key features of Inslee-Doyle as it has evolved.

What is rebated to energy-intensive, trade-exposed manufacturers under these proposals is a significant portion of the cost of unilateral regulation, both the direct costs of allowances or of a carbon tax or carbon permit, et cetera, as well as the indirect cost that results from regulation-caused increases in the electricity that we consume. The rebate then relates to, reduces the cost of, all production of all qualifying sectors. It does not rely, that is, only on regulation of imports or exports.

My principal goal in appearing today is to commend to you output-based rebates as you construct legislative responses to climate change. My written testimony addresses key features of such a provision in some detail. I note that output-based rebates work as well in a carbon tax or other revenue-type measure as they do in cap-and-trade bills and that they can fit well with other forms of relief, such as those focused on the borders, as Mr. Gerard's excellent testimony explains. Indeed, many of the bills to date have contained more than one of these provisions.

The other basic category of relief, as the opening statements indicated, focuses on the border. It includes the kind of import measure referred to as "border equalization" that resulted from the work of the International Brotherhood of Electrical Workers and has appeared in many bills. And while the IBEW provision, like others operating in a cap-and-trade context, does not include export rebates, the category itself does, and under export rebates, which, as I understand it, are WTO compliant in some contexts such as VAT taxes, the cost of regulation is rebated to manufacturers of energy-intensive products being exported.

I look forward to discussing with the Subcommittee some of the ways in which I see that an output-based rebate fills in some gaps that otherwise exist in border measures.

Finally, I want to mention that another characteristic of our group's members is that we have union workforces and that we have worked hard and successfully with our unions over the last several decades spurred by foreign competition to become in the main the most productive producers in the world. It is a pleasure to be sitting on this panel beside Mr. Gerard and to be working alongside our labor colleagues as well as the environmental community to find a solution to this very pressing problem.

[The statement of Mr. McMackin follows:]

Testimony of John J. McMackin
on behalf of
The Energy-Intensive Manufacturers' Working Group
on Greenhouse Gas Regulation

Before the House Committee on Ways and Means
Subcommittee on Trade
Hearing on
Trade Aspects of Climate Change Legislation

March 24, 2009

Mr. Chairman and members of the Subcommittee, it is an honor to be here. The Energy-Intensive Manufacturers' Working Group on Greenhouse Gas Regulation, on whose behalf I appear today, greatly appreciates this opportunity to testify on this critical issue.

I am Jack McMackin, and I am a principal in the law firm of Williams & Jensen, PLLC and a director of Owens-Illinois, Inc. O-I, headquartered in Perrysburg, Ohio and with U.S. facilities in eleven states, is the world's largest manufacturer of glass containers. O-I is a very active and committed member of the Working Group.

Solving the puzzle at the heart of today's hearing is the reason our group was formed. How can we reconcile three things that are seemingly at odds: (1) a unilateral U.S. legislative effort, that (2) addresses a global environmental problem, in light of (3) the reality of global competition? Put differently, our group is all about a solution to "the leakage problem."

I. The Energy-Intensive Manufacturers' Working Group on GHG Regulation—and "The Leakage Problem."

The Working Group was formed early last year for a narrow but important purpose: to engage constructively with other stakeholders and Congress to attempt to solve what is often referred to as "the carbon leakage problem" but what is in truth a problem both of the leakage of carbon *and* of jobs. In short, if the U.S. enacts tough global warming regulation but other key manufacturing nations do not, production of energy intensive goods may well shift to the unregulated countries, moving the associated carbon emissions beyond regulation and moving American jobs elsewhere as well.

It is a problem that primarily affects energy-intensive industries that face foreign competition—the two factors that define our members. Our group is composed of companies from the U.S. industries that are widely and correctly seen as most vulnerable to leakage: ferrous metals (iron and steel), non-ferrous metals (aluminum and copper), cement, glass (including fiberglass), ceramics, chemicals and paper. The companies include Alcoa, Corning, Dow, Holcim(US), NewPage Corporation, Nucor, Owens Corning, Owens-Illinois, PPG, Rio Tinto, and U.S. Steel.[1]

I should mention that these are all companies that, of necessity, have already done much to increase their energy efficiency and decrease their emissions. Energy-intensive, trade-exposed industries already have a compelling economic incentive to become energy efficient, which, in turn, leads them to be carbon efficient. Energy costs are a substantial portion of these producers' manufacturing costs. Energy efficiency reduces their cost of energy, which enables them to compete more effectively.

The existence of this incentive is one of the primary reasons that, according to Energy Information Agency Data comparing 1990 emissions to those in 2005, the manufacturing sector as a whole has actually decreased its total emissions, direct and indirect, since 1990, while all other sectors are up, on average, over 30 percent. Similarly, the March 1, 2008 Public Review Draft of EPA's Inventory of Greenhouse Gas Emissions and Sinks 1990-2007 (p. ES-16), shows the industrial sector's total direct and indirect emissions down by 4.2 percent over the period. Moreover, as I will discuss in more detail later in my testimony, our work indicates that based on available data the total emissions of the 40-plus specific industrial sectors or subsectors (by six digit NAICS code) that are most exposed to leakage represent only about 8 percent of total U.S. direct emissions.

The magnitude of potential leakage is a subject of considerable recent study and wide-ranging views. Some of the estimates are truly frightening. In testimony delivered last week before the Energy and Environment Subcommittee of the Energy and Commerce Committee, Richard D. Morgenstern of Resources for the Future gave a long-term figure of 40 percent—assuming a carbon price of only $10: "Over the long term, we estimate that the leakage rate for the few most-vulnerable industries can be as high as 40 percent in the case of a unilateral $10 per ton CO2 price."[2]

There is a broad consensus that the leakage problem must be solved in any responsible global warming legislation. To fail to do so is irrational: it produces economic dislocation and job loss in exchange for no environmental benefit or, even, net environmental harm. The major question as this stage is not whether to address the problem but *how* to address it.

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[1] While this written testimony generally represents the position of the Working Group, not all statements are necessarily endorsed by every member. I do not represent members of the group other than Owens-Illinois, and while my responses to any questions during the hearing will attempt not to stray from the group's views, those responses will be my own and not necessarily the group's.

[2] Testimony of Richard D. Morgenstern, Senior Fellow, Resources for the Future, Prepared for the Committee on Energy and Commerce, U.S. House of Representatives, Hearings on Competitiveness and Climate Policy: Avoiding Leakage of Jobs and Emissions, March 18, 2009, at 5. On page 7-8 of his testimony Mr. Morgenstern cautions that the modeling done by him and his collaborators may somewhat overstate leakage because some of the trade partners it includes, such as the EU, have themselves adopted carbon regulation. However, most of these, it should be noted, such as the EU and Australia, have themselves adopted anti-leakage allowance-grant programs for their energy-intensive and trade exposed industries.

Our group's work is *focused exclusively on one type of potential solution*: the grant of free allowances to the most vulnerable manufacturers or the rebating of compliance costs to the most vulnerable manufacturers in some form (including a refundable tax credit). We have not focused, that is to say, on the import ("border equalization") or export ("export rebate") provisions that some have proposed and that the Subcommittee will also be considering. Allow me to make two points that further explain where our proposal fits in the current legislative and policy context.

1. Leakage, and our proposal to deal with it, applies equally in either cap-and-trade or carbon tax contexts.

Leakage results from any form of unilateral U.S. regulation of greenhouse gases that imposes significant costs on energy-intensive, trade-exposed U.S. industries while foreign production is not commensurately burdened. What matters is the climate-policy induced cost differential between U.S. and foreign production of competing goods; the form of the regulation causing the unilateral costs does not matter. Hence, the leakage problem exists whether Congress were to choose a cap and trade structure with its associated carbon "allowance" requirement or a carbon tax.[3] Similarly, the potential remedies to leakage are essentially the same regardless of which form (cap and trade, tax, etc.) mandatory climate policies take.

2. It is possible to divide the proposed solutions into two broad categories: (a) "cost mitigation" at the plant level which includes grants of free allowances or tax credits, and (b) "import and/or export cost-equalizing provisions."

Both of these broad categories seek to lessen the cost that would be imposed by greenhouse gas regulation on U.S. production *relative to* that of unregulated or lesser regulated countries. The first seeks to attack the differential by eliminating or mitigating the cost to U.S producers "at the source," as it were, through free allowance grants, rebates of the cost of allowances, or tax credits to the manufacturer. The second seeks to equalize the costs at the border, either by imposing comparable allowance requirements on imports or by rebating a value-added type tax on exports.

a. cost mitigation at the source

As indicated above it is the first category, cost mitigation at the source through allowance grants or allowance-value rebates or credits, upon which our efforts are exclusively focused. It is also the principal mechanism adopted by the EU and Australia to deal with the leakage problem that would otherwise be caused by their cap and trade regimes. Moreover, virtually every global warming bill introduced last year had some variation of this form of relief. Its most sophisticated form, and the one that seems to be

[3] For a discussion of the leakage problem in a carbon tax context see generally, Metcalf and Weisbach, "The Design of a Carbon Tax," Working Paper 09-05, January 2009, AEI Center for Regulatory and Market Studies (2009).

attracting the broadest support, is an "output based" grant of free allowances (or rebate of allowance value) to energy-intensive, trade-exposed manufacturers.

Output-basing was at the heart of the anti-leakage amendment authored by Senators Brown and Stabenow in Senate consideration of the Boxer substitute to the Lieberman-Warner bill, and is currently the focus of work by Congressmen Inslee and Doyle building on last year's Inslee-Doyle "Carbon Leakage Prevention Act." Last year's bill introduced by Mr. Doggett and his cosponsors, H.R. 6316, the "Climate Matters Act of 2008" contained an allowance grant provision as well as a "border equalization" provision. Moreover, Mr. Doggett, we understand, is currently considering modifying this provision to reflect Inslee-Doyle type output-basing, albeit in the context of a tax rebate or credit.

It is important to note that if a tax code mechanism is used to rebate to leakage-exposed manufacturers some or all of the cost of unilateral greenhouse gas regulation, the provision must be carefully crafted and refundable so that the solution works regardless of a firm's regular or AMT tax status. In any given year, some energy-intensive, trade-exposed industries may not owe income taxes against which a deduction or credit could be applied. Such a tax position could result from any number of factors typical of these companies: eroded revenue or margins from foreign competition and high energy costs, high depreciation from machinery and equipment investments, labor and benefits costs, asbestos-liability payments, and built-up losses and unused credits from any number of sources. If a revenue rebate is not refundable many targeted industries would receive no benefit yet would bear the cost of unilateral regulation—and outcome that does nothing to stop job and carbon leakage.

b. cost equalization at the border

The second general category has to date largely focused on imports, through "border equalization" provisions that, rather than attempt to mitigate the net cost at the level of the producer instead attempts to impose an equivalent cost on competing products as the border. The provision designed by the International Brotherhood of Electrical Engineers and American Electric Power is a prominent example. The IBEW/AEP proposal seeks to equalize the costs of imports that compete with American energy-intensive goods by imposing a special "international allowance" obligation on such imports. Mr. Doggett's bill from last year contains a parallel provision (as well as its cost-mitigating allowance grant). Likewise, the bill introduced by Mr. Larsen, America's Energy-Security Trust Fund Act, which is structured as a carbon tax, would impose a fee on imports equivalent to the tax.

Other proposals are emerging that attempt to deal with the issue of competitiveness of American exports by structuring greenhouse gas regulation as a charge similar to a value added tax and the rebating that tax on exports.[4] Note that these

[4] For a general discussion of the various forms of import and export provisions see, Fischer and Fox, "Comparing Policies to Combat Emissions Leakage: Border Tax Adjustments versus Rebates," Discussion Paper, Resources for the Future (February 2009).

provisions attempt to "equalize" the cost of American export products with their competitors in non-domestic markets. Unlike the allowance-grant or allowance-value rebates to manufacturers, these export provisions do not attempt to eliminate or mitigate the cost of regulation for energy-intensive goods in the domestic market.

While I reiterate that our Working Group's work has been solely on the first category, the cost mitigating proposals, and we do not as a group take a position on the import/export provisions, I do want to point out that the various approaches are not necessarily incompatible. It is possible to enact both types of provisions in the same legislation, and indeed most of the legislation introduced to date has had both grants of free allowances and border equalization provisions. I will have a few general comments later in my testimony on the relationship of the differing provisions that explain our position that even if the import and/or export provisions are included in greenhouse gas legislation, the cost-mitigating allowance-grant type provisions are still urgently needed.

With respect to the object of our focus, the cost-mitigation proposals, good progress is being made and a convergence is emerging—much of this reflected in the legislation introduced late last year by Congressmen Inslee and Doyle, the "Carbon Leakage Prevention Act"— key provisions of which, as indicated above, are under consideration by Mr. Doggett. Such provisions fit well with bills that focus on tax credit mechanisms as well as more traditional cap-and-trade structures.

II. Good Progress Is Being Made—We Support the Inslee-Doyle Output-Based-Rebate Type Solution, Subject to Further Work on the Eligibility Mechanism and Other Issues. We Urge the Trade Subcommittee and Full Committee to Consider Including Similar Provisions in the Committees' Global Warming Legislation.

The legislation Congressmen Inslee and Doyle introduced last year, H.R. 7146, represents the core of a workable solution, and we support its approach. It is not perfect from our point of view and we know it is not final. It should be noted that it certainly does not negate all of the cost that would be imposed by cap and trade legislation on trade-vulnerable, energy-intensive manufacturers. It is appropriately neither a categorical exemption nor a complete elimination of compliance costs. Likewise, it is structured to be transitional relief that keeps American businesses competitive until global agreement can be reached. We are working with the congressmen and other stakeholders to refine it further.

There remain important issues we believe must be addressed. Chief among them is the manner in which last year's bill dealt with selection by EPA of eligible industries. We believe that Congressmen Inslee and Doyle are reworking this section, and we are very hopeful that a new provision will make the process more certain, more objective and more data driven. In any event, I discuss our eligibility concern and a potential solution in more detail later in my testimony (Section IV). I would also note that among the other important issues that merit further attention are the fact that the allowances would not be sufficient to cover the full amount of the costs at issue and the amount of discretion to reduce or eliminate the program. I also note that the Dingell-Boucher discussion draft released last year adopted much of the Inslee-Doyle structure as it existed at the time, along with some changes that we think helped advance the thinking of all of us on the leakage problem.

Moreover, I want to stress the "convergence" that we are seeing. In the Senate, those members who have worked most intensely on the issue, such as Senators Brown and Stabenow (as reflected in their amendment in Senate consideration of the Lieberman-Warner bill), as well as many of those in the environmental and academic communities who have studied the issue, USCAP, and others, are not only supporting allowance-grant relief to energy-intensive, trade-exposed industries, they are supporting key structural elements that also undergird the Inslee-Doyle approach. The most important of these is basing allocations on actual output as opposed to historic or grandfathered levels and incorporating an efficiency standard into the allocation formula.

III. Key Features of the Inslee-Doyle Output-Based-Rebate Solution.

In essence, the Inslee-Doyle solution, like the Brown-Stabenow solution in the Senate, is a cost-mitigating program that *(i)* grants free allowances *or rebates allowance value* to energy-intensive trade-exposed industries to compensate them for *(ii)* a significant portion of the direct allowance and increased electricity costs of a cap-and-trade regime, *(iii)* that varies the grant based upon a facility's actual, not historic, output, *(iv)* that rewards a facility for carbon efficiency and punishes it for inefficiency though use of a benchmark or efficiency standard, and *(v)* that phases out only as international agreements solve the underlying cost disparity.

I will not discuss each of these features in detail, but I do want to note a few of their most important aspects.

A. Output-Based Allotments

The Inslee-Doyle mechanism provides for output-based allotment of allowances. Most of the early anti-leakage, cost-mitigating provisions based their allocation of allowances on a facility's historic emissions. This raised a number or problems, including the following two.

First, historic or grandfathered emissions approaches provide a disincentive to increase production and also discourage new-firm entry—and lost production opportunities in the U.S. may result in production of the same goods elsewhere. An historic-based allocation would not mitigate the cost of additional production. Additional production would be fully exposed to the cost of allowances. Hence, the mechanism would do nothing to help energy-intensive industries to expand production and add jobs. At risk, for instance, would be added production to supply steel, aluminum, copper, glass, ceramics, fiberglass, etc. to what we all hope will be increased production of green products, from wind turbines to solar panels. Similarly, American suppliers would be less likely to be providing the cement, plate glass or fiberglass going into new construction of energy-efficient buildings or renovations of older inefficient ones.

Second, some believe historic-based allocations—but not output-based allocations—may in some instances produce an incentive to raise prices but not production. To some commentators this strange phenomenon is a function of "opportunity cost." In some (limited) circumstances, a producer may be able to obtain higher prices, or fail to pass through the cost savings occasioned by free allowances, by in essence saying that if it does not receive from its customers an incremental return on its allowance-grant asset it will reduce production and sell the freed-up allowance. In other words, the existence of this opportunity to sell the allowance changes the seller's supply curve. *In any event, basing the allowance grant on actual output solves this problem—to the extent it exists— by removing the "opportunity" to sell an unused allowance*. A facility only gets an allowance for a product it produces.

Output-basing has another big advantage. It facilitates the use of a benchmark or efficiency standard. A facility's actual production can be included in a formula with an efficiency standard to determine the number of allowances granted.

B. Efficiency Standards

As I described earlier, energy-intensive, trade-exposed industries already have a compelling economic incentive to become energy efficient, which, in turn, leads them to be carbon efficient. That incentive has resulted in remarkable production innovations and efficiency gains. Nonetheless, some policy makers have sought additional assurances that anti-leakage provisions will further incentivize emissions reductions.

Last year's Inslee-Doyle legislation provided this through the use of an effective and practical benchmark: the average energy efficiency of a sector or subsector. This standard has the advantage of being both relatively easy to determine, by definition achievable, and constantly increasing over time. Companies above the average would do relatively better and those below relatively worse, creating an added incentive for each group to improve its efficiency—and thus raising the average. This mechanism inherently rewards operational efficiency and therefore creates a lasting incentive for continuous innovation and technological development.

So, we support the efficiency standard in Inslee-Doyle as introduced last year. We are very concerned, however, about some changes proposed to it. Some would seek to replace the sector-average standard with a "best practices" standard. It would be impossible for companies facing the threat of leakage, or legislators assessing policy options, to know at this juncture whether that which would be deemed by EPA to be the "best practice" in a sector or subsector is economically feasible, or, for that matter, reasonably available.

If it were not, the leakage relief afforded by the allocation grant provision could be illusory. For example, while paper mills use biomass as fuel, many are also coal-fired.

A coal-fired paper plant in Maine, for example, might be forced to close if EPA determined that gas combustion or biomass was the "best practice." And, the jobs lost in all likelihood would not move to a gas-fired plant in the U.S., but, rather, to foreign producers. A best practices regulatory regime is a very different animal than a cap and trade scheme, and attempting to combine the two is very likely a bridge too far. We would strongly oppose it.

C. Direct and "Indirect" Costs

The Inslee-Doyle provision compensates for some, but not all, of the costs that would be imposed by cap and trade legislation. I believe it is important to understand the compromise it represents in this respect.

The costs imposed on U.S. manufacturers by greenhouse-gas legislation will be both those that result directly from their obligation to buy and submit allowances (or under a carbon tax to pay the tax) and "indirectly" from higher prices for electricity, feedstocks, and other production inputs. Moreover, the cost of natural gas, as one example, is likely to increase far more than the cost of allowances associated with its combustion because of the effect of fuel substitution that will drive up the demand for natural gas and because of a shift in the demand curve for natural gas that results precisely from its carbon advantage.

A true cost-*negating* anti-leakage provision would address all indirect as well as direct costs. The Brown-Stabenow amendment in the Senate attempted to take this approach. The Inslee-Doyle cost-*mitigation* approach does not. It would compensate for the increased cost of purchased electricity, but would not compensate for cost increases of feedstocks/inputs, nor would it compensate for the demand and demand-curve caused increases in natural gas. Additionally, Inslee-Doyle imposes an across–the-board 15 percent reduction on its reimbursed costs, direct and indirect—compensating, that is, for only 85 percent of those costs. This was done in part to reduce the grants awarded to a highly efficient producer as a result of the efficiency benchmark.

D. Termination Tied to International Solutions

If the allowance-grant program were to expire on a date certain, or decline on a fixed basis, leakage could re-emerge even after it appeared under control. In fact, because manufacturers need certainty and because they plan their capital allocation far in advance, an expiring anti-leakage provision may well tilt plant location decisions toward foreign locations without regulation. Moreover, a set expiration date would give other countries an incentive to drag their feet in negotiations—to wait us out.

Instead, targeted assistance to energy-intensive industries should be terminated only when the carbon leakage problem is solved through an international agreement. And, it should be phased down only in proportion to progress made in reducing the cost differentials between trading partners in a fashion that demonstrably reduces the disadvantage to domestic producers—not according to an arbitrarily defined timeline.

While further refinements are needed, the Inslee-Doyle proposal generally takes this approach.

IV. The Issue of "Qualifying" Industries or Sectors

The Working Group's major issue with the Inslee-Doyle Carbon Leakage Prevention Act as introduced last year concerned its procedures and standards for determining which sectors or subsectors would be eligible to receive allowances. The bill assigned this determination to the EPA subject to a set of criteria that left much room for interpretation and disagreement. In effect, EPA and manufacturers would have been subjected to a series of contested, forecast-rich procedures covering scores of manufacturing sectors and subsectors. These proceedings would be filled with questions of market and product definition as well as competitive impacts. The bill established a very uncertain process—and affected industries need some reasonable level of certainty in making capital expenditure decisions, decisions they must make even now. Similarly, members of Congress from manufacturing states need to know whether their industries will get relief or not.

By contrast, most of the other legislative proposals from last Congress, including the Lieberman-Warner bill, the Boxer substitute, the Brown-Stabenow amendment, and the Dingell-Boucher discussion draft, listed specific industries that would be eligible.

A middle way offering several advantages has emerged. It was suggested by an analysis of the European approach and the work of any number of organizations and scholars—for example, the work of the Peterson Institute and the World Resources Institute in their publication.[5]

Our Working Group has been actively engaged in providing analysis and ideas for this proposal, and it is likewise under consideration by Congressmen Inslee and Doyle. In brief, the provision establishes "presumptive" eligibility through a two-factor test, energy intensity measured by a ratio that sets energy costs over value of shipments and trade exposure measured by the value of imports and exports over the value of shipments plus imports. If a sector or subsector met the presumptive-eligibility standards, it would be eligible for allowances unless the Administrator found that it was not subject to substantial leakage. Any sector or subsector that did not meet the presumptive eligibility tests would be able to establish eligibility through a demonstration of the likelihood of leakage. The actual amount of allowances granted would be decided by the Inslee-Doyle formulas which focus on GHG emissions. The proposed eligibility methodology would make the process of designation of eligible sectors more certain, manageable, principled and data-driven.

[5] Houser, Trevor, Rob Bradley, Britt Childs, Jacob Werksman, and Robert Heilmayr, *Levelling the Carbon Playing Field: International Competition and US Climate Policy Design,* May 2008.

V. Some Key Metrics: The FTI Study

Attached to this testimony is a summary of the results of a study by FTI Consulting. We believe and hope it will make an important contribution to analysis of the eligibility issues by all concerned. One of its principal contributions, we think, is to "disaggregate" the very broad categories of industries that had been studied by others and to examine the data at a six-digit North American Industrial Code System level. In addition, it applies objective energy-intensity and trade-intensity criteria to the broad range of American industry, identifying sectors or subsectors that should at least presumptively qualify for relief but that were not on the list most frequently identified. We invite and welcome comment on the study, and we will ask Rob Fisher of FTI to be available for those who wish to work with him.

The study examines the publicly-available trade, energy use, and sales revenue data and implements an energy-intensity threshold of 5 percent and a trade-exposure threshold of 15 percent to determine presumptive eligibility. Both of these standards are consistent with, but somewhat more conservative than, other work to date in the area. For instance, the 5 percent appears to be very near the standard applied by the Peterson/WRI analysis cited above and presents a stricter eligibility threshold than the 4 percent level cited by the recent Pew Congressional Policy Brief, "Addressing Competitiveness in U.S. Climate Change Policy." The study uses the same formula to determine a trade-exposure ratio as does the EU's regulatory scheme, but the study applies a stricter 15 percent trade-exposure compared to the EU's 10 percent.

The FTI study finds 40-plus sectors or subsectors that would qualify for presumptive eligibility, including the list commonly identified as most at risk and represented by our Working Group members. However, the study also identified smaller industries, largely overlooked to date, that meet the criteria and thus would be presumptively qualified. For example, nitrogenous fertilizer with an energy intensity of 14 percent and a trade intensity of 86 percent would qualify, as would wet corn milling, which includes corn sweeteners, at11 percent energy intensity and 20 percent trade intensity. The manufacture of refined beet sugar (7 percent energy intensity; 22 percent trade intensity) would qualify as well.

While the energy-intensity and trade-intensity data is relatively straightforward, figuring out the amount of emissions implicated takes considerable extrapolation, so the numbers that follow are approximate. In all, 45 industries are identified as presumptively qualifying (out of the 473 industries included among the NAICS industrial manufacturing codes). These represent about 8 percent of total direct U.S. emissions. When all of the emissions associated with their electricity consumption are included, these industries represent about 10.5 percent of total U.S. emissions. An allowance program that compensated them for the cost of their direct emissions and increased cost of electricity would require about 13 percent of allowances available, for example, under the Lieberman-Warner first year cap of 5,700 million ton CO_2e cap in the first year. It should be noted that the 13 percent figure is a rough approximation and that it does not reflect industries that do not qualify for presumptive eligibility but successfully make individuated showings. Moreover, the figure does not include allowances needed to cover production growth.

I should also note that while using data from six-digit NAICS codes to determine whether a sector or subsector would presumptively qualify provides an excellent balance of determinacy, accuracy and administrative ease, it does not work in every instance. Some energy-energy intensive and trade-intensive manufacturing facilities are not classified in six digit codes that meet the presumptive thresholds. For example manufacturers of ceramic substrates for catalytic converters and diesel particulate filters are classified in a NAICS code for auto parts that would not meet the standards. Yet, these manufacturers are energy- and trade-intensive and meet the thresholds on properly individuated data. These circumstances must be accommodated in designing a presumptive-qualification mechanism.

VI. The Relationship of Allowance Grants and Border Cost-Equalization Proposals

As indicated above, while our Working Group's focus has been solely on the Inslee-Doyle type allowance grants that seek to address the leakage problem by mitigating the cost impact of greenhouse gas regulation on energy-intensive and trade-exposed industries, most legislative proposals to date have included border equalization provisions as well. The details of the interface of the two provisions are critical. I wish to make just a few brief and general points about the relationship of the two.

Exports. First, most border equalization provisions suggested so far do not help U.S. manufacturers stay competitive in export markets, and because of the WTO prohibition on export rebates it is difficult to design a border equalization mechanism within a cap and trade structure that will ensure U.S. manufacturers maintain their competitiveness in export markets. Energy-intensive manufacturers are significant exporters. In fact, energy-intensive manufacturing accounts for approximately 14 percent of all U.S. exports. It is unwise to put these exports in jeopardy. This export problem can effectively be addressed through a system of free allowances or rebates without giving rise to a WTO challenge.

Downstream and "Green" Products. Second, border-equalization mechanisms are designed to allow energy-intensive manufactures to pass along the legislation-driven costs to their customers by raising the cost of materials imported into the U.S. by a comparable amount. This creates the troubling possibility that the downstream products could become less competitive as against products produced elsewhere. For instance, because the cost of a bottle is significant part of the cost of a beer or a bottle of wine, Mexican beer and Chilean wine would have a cost advantage over American beer and wines. By way of further example, and assuming the relevant downstream industry is not covered by a border adjustment mechanism, U.S. car assembly plants could be at a cost disadvantage relative to foreign car manufacturing locations that can buy their steel, glass, aluminum and ceramics outside the protective zone of the border equalization provision. This downstream-product phenomenon could be especially harmful to our country's hopes of participating in the manufacture of "green products" such as wind turbines and solar panels. It should be noted that border rebate provisions within a VAT-tax-like context, which are directed at keeping American products competitive in export markets, likewise do not address this downstream cost problem.

Certainty. Lastly, allowance allocations to energy intensive industries are within our control, are not subject to serious legal challenge, are a feature of cap and trade regimes enacted to date including those in the EU and Australia, and are very unlikely to lead to retaliation or trade wars.

There is a role for WTO-compliant border equalization mechanisms, and perhaps other trade measures, where allowance grants are inadequate or unavailable, and, moreover, such mechanisms should be part of our negotiators' tools. They cannot, however, be the primary mode of relief for the pressing problem of the leakage of carbon and jobs presented by U.S. greenhouse gas regulation.

Mr. Chairman and members of the Subcommittee, thank you very much for this opportunity to appear before you.

ATTACHMENT A

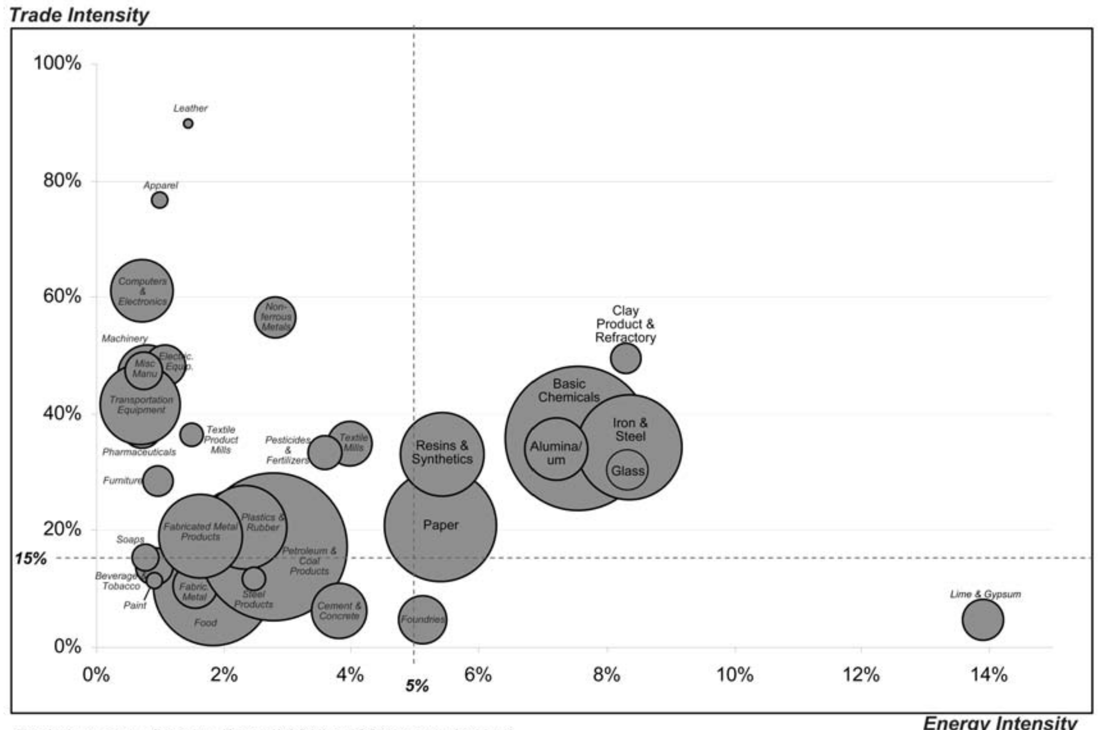
Greenhouse Gas Emissions Legislation
Leakage-Exposed Manufacturers

Briefing Book

FTI
Rob Fisher
(202) 589-3408

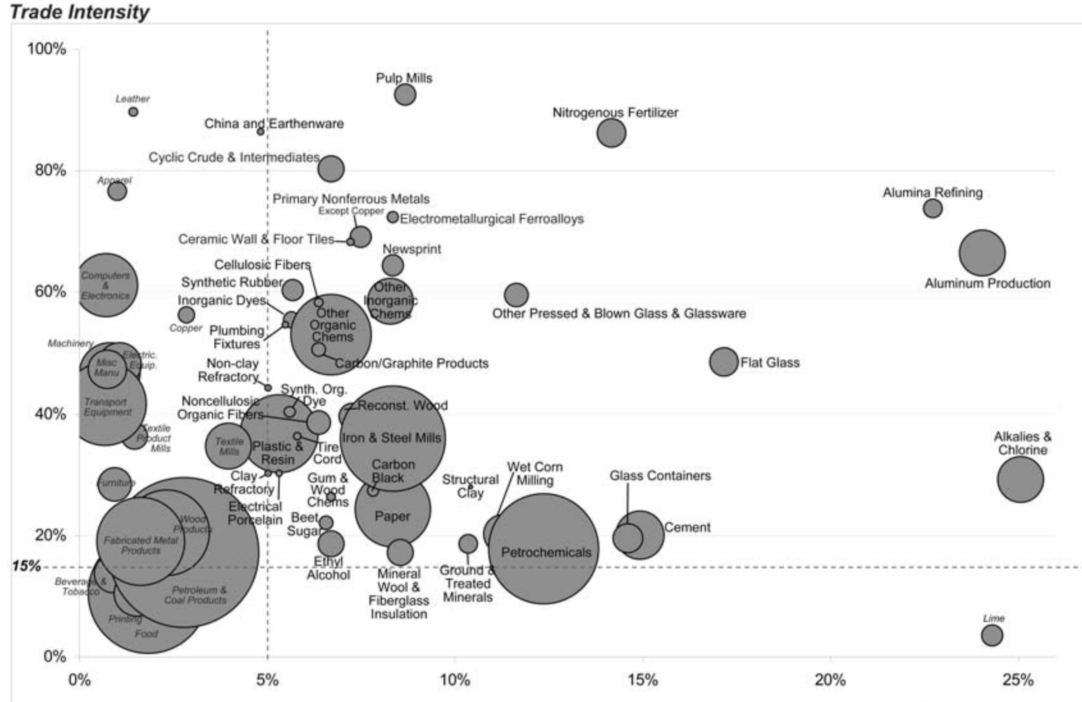
March 24, 2009

US Manufacturing Leakage Exposure: Aggregate Level



Trade-Intensity = (Imports+Exports) / (Value of Shipments+Imports)
Energy-Intensity = (Energy & Fuel Costs + Generation) / Value of Shipments
Size of Bubble = Amount of energy and fuel consumed as proxy for emissions
Sources: US Census 2006 Annual Survey of Manufacturers, EIA 2002 MECS, US International Trade Commission Tariff & Trade DataWeb

US Manufacturing Leakage Exposure: Detailed Industry Level



Trade-Intensity = (Imports+Exports) / (Value of Shipments+Imports)
Energy-Intensity = (Energy & Fuel Costs + Generation) / Value of Shipments
Size of Bubble = Amount of energy and fuel consumed as proxy for emissions
Sources: US Census 2006 Annual Survey of Manufacturers, EIA 2002 MECS, US International Trade Commission Tariff & Trade DataWeb

Leakage Exposure

To identify the manufacturing industries that are the most highly exposed to this leakage issue, we calculated the energy intensity and trade intensity of each manufacturing sub-industry (at the 6-digit NAICS code).

Methodology for Calculating Energy-Intensity and Trade-Intensity

- We first calculated the energy intensity of each industry. The primary data source we used was the most recent Annual Survey of Manufacturers (ASM) from the US Census, which includes data for 2004-2006. From the ASM we calculated the costs of purchased electricity and of purchased fuel as a percentage of the value of shipments.

- For export and import data, we relied on the US International Trade Commission's Trade Dataweb statistics for 2004-2006, which provides trade data at the 6-level NAICS level.
    - For Imports, we used the US Imports for Consumption category and within that category, we used the CIF Import Value.
    - For Exports, we used the Domestic Exports category. Within that category, we used FAS Value.

- Based on the work in other studies and on the EU's scheme, we have used two thresholds to determine those industries most exposed to leakage[2]:

    1) Energy intensity of **5%**
    2) Trade intensity of **15%**

- The maximum for the last three years of available data (2004-2006) was used to determine eligibility. So, for example, if an industry's energy intensity for the last three years respectively was 4%/5%/4%, it met the eligibility requirement.

[2] Ratios were rounded to nearest whole percentage point. For example, a calculated energy intensity of 4.51% or higher was rounded up to 5.0% and thus met the 5% threshold.

Methodology for Calculating Energy-Intensity and Trade-Intensity (continued)

- 41 industries met these two criteria.

- In addition, we included NAICS code 311210 (Iron and steel tube and pipe from purchased steel) in order to treat it the same for eligibility purposes as tube and pipe manufactured on an integrated basis.

- We added NAICS code 212210 (Iron ore mining and processing) to capture the beneficiation and other processing for similar reasons – to treat products the same for eligibility purposes whether they are produced at an integrated or non-integrated facility.

- To determine eligibility for the copper industry, we combined the energy and trade data for NAICS codes 331411 (Primary smelting and refining) and 212234 (Copper and nickel mining) to properly capture all copper processing whether the beneficiation of ore occurs at an integrated or non-integrated facility.

- A product that meets the energy intensity and trade intensity criteria should be considered eligible even if the facility that produces it is classified in a non-qualifying NAICS code by virtue of the facility's other products or the facility's ultimate product.

Qualifying Manufacturing Industries

Sectors	NAICS	Sub-Industry	Leakage-Intensity: Energy Intensity	Leakage-Intensity: Trade Intensity	Value of Shipments
Pulp, Paper & Newsprint Mills	322110	Pulp mills	9%	92%	4
	322121	Paper (except newsprint) mills	8	24	47
	322122	Newsprint mill products	8	64	4
Basic Chemicals	325110	Petrochemicals	12	18	66
	325131	Inorganic dyes and pigments	6	55	4
	325132	Synthetic organic dyes and pigments	6	40	3
	325181	Alkalies and chlorine	25	29	6
	325182	Carbon black	8	27	2
	325188	All other basic inorganic chemicals	8	58	19
	325191	Gum and wood chemicals	7	26	1
	325192	Cyclic crude and intermediates	7	80	9
	325193	Ethyl alcohol	7	18	8
	325199	All other basic organic chemicals	7	53	69
	325211	Plastics material and resins	5	37	79
	325212	Synthetic rubber	6	60	7
	325221	Cellulosic organic fibers	6	58	1
	325222	Non-cellulosic organic fibers	6	38	7
Nitrogenous fertilizer	325311	Nitrogenous fertilizer	14	86	4
Ceramics/Porcelain	327111	Vitreous china plumbing fixtures	6	55	1
	327112	Vitreous china and earthenware articles	5	86	1
	327113	Porcelain electrical supplies	5	30	1
	327122	Ceramic wall and floor tiles	7	69	1
	327123	Other structural clay products	10	28	0.2
	327124	Clay refractory	5	30	1
	327125	Non-clay refractory	5	44	1
Glass Production	327211	Flat glass	17	48	3
	327212	Other pressed and blown glass and glassware; incl. optical fiber	12	59	4
	327213	Glass containers	15	20	4
Cement	327310	Cement	15	20	11
Fiberglass	327993	Mineral wool	9	17	6
Iron & Steel	331111	Iron and steel	8	36	92
	331112	Electrometallurgical ferroalloy products	8	72	1
	331210	Iron and steel pipe and tube from purchased steel			10
	212210	Iron ore mining and beneficiation	18	54	2
Alumina/um	331311	Alumina refining	23	74	1
	331312	Primary aluminum production	24	66	6
Copper	331411	Primary smelting and refining of copper	6	71	10
	212234	Copper and nickel mining and beneficiation			
Other Industries	311221	Wet corn milling	11	20	10
	311313	Beet sugar	7	22	3
	314992	Tire cord and tire fabric mills	6	34	1
	321219	Reconstituted wood products	7	39	8
	327992	Ground or treated minerals and earth	10	19	3
	331419	Primary nonferrous metal (except copper and aluminum)	8	69	5
	335991	Carbon and graphite products	6	50	2

Trade-Intensity = (Imports+Exports) / (Value of Shipments+Imports)
Energy-Intensity = (Energy & Fuel Costs + Generation) / Value of Shipments
Sources: US Census 2006 Annual Survey of Manufacturers, EIA 2002 MECS, US International Trade Commission Tariff & Trade DataWeb
EPA -- Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006
Note: Percentages are rounded to nearest percentage point

Qualifying Industry Descriptions

NAICS	NAICS Name	Description
311221	Wet corn milling	Wet milling corn and other vegetables (except to make ethyl alcohol) to make such products as corn sweeteners (eg, glucose, dextrose, and fructose); corn oil; and starches (except laundry)
311313	Beet sugar	Refined sugar from sugarbeets
314992	Tire cord and tire fabric mills	Cord and fabric of polyester, rayon, cotton, glass, steel, or other materials for use in reinforcing rubber tires, industrial belting, and similar uses
321219	Reconstituted wood products	Reconstituted wood sheets and boards, such as waferboard, oriented strandboard and particleboard
322110	Pulp mills	Pulp manufacturers that do not make paper or paperboard; pulp is made by separating the cellulose fibers from the other impurities in wood or other materials
322121	Paper mills	Paper (except newsprint and uncoated groundwood paper) made from pulp; may also manufacture or purchase pulp
322122	Newsprint mill products	Newsprint and uncoated groundwood paper from pulp
325110	Petrochemicals	Acyclic (aliphatic) hydrocarbons (eg. ethylene, propylene, and butylene) and/or cyclic aromatic hydrocarbons (eg. benzene, toluene, styrene, xylene, ethyl benzene, and cumene) made from refined petroleum or liquid hydrocarbon
325131	Inorganic dye and pigments	Black pigments, except carbon black, white pigments, and color pigments.
325132	Synthetic organic dye and pigments	Includes lakes and toners (except electrostatic and photographic)
325181	Alkalies and chlorine	Chlorine, sodium hydroxide (i.e., caustic soda), and other alkalies often using an electrolysis process
325182	Carbon black	Carbon black, bone black, and lamp black
325188	All other basic inorganic chemicals	Basic inorganic chemicals (except industrial gases, inorganic dyes and pigments, alkalies and chlorine, and carbon black)
325191	Gum and wood chemicals	Wood or gum chemicals (eg, naval stores, natural tanning materials, charcoal briquettes, and charcoal, except activated) or Distillation of wood or gum into products (eg, tall oil and wood distillates)
325192	Cyclic crude and intermediates	Cyclic crudes or, cyclic intermediates (i.e., hydrocarbons, except aromatic petrochemicals) from refined petroleum or natural gas or the distillation of coal tars
325193	Ethyl alcohol	Nonpotable ethyl alcohol
325199	All other basic organic chemicals	Basic organic chemical products (except aromatic petrochemicals, industrial gases, synthetic organic dyes and pigments, gum and wood chemicals, cyclic crudes and intermediates, and ethyl alcohol)
325211	Plastics material and resins	Resins, plastics materials, and nonvulcanizable thermoplastic elastomers and mixing and blending resins on a custom basis and/or noncustomized synthetic resins
325212	Synthetic rubber	Synethetic rubber such as Styrene-Butadiene-Rubber (SBR), butyl, polychloroprene, and stereo polyisoprene elastomers
325221	Cellulosic organic fibers	Cellulosic (i.e., rayon and acetate) fibers and filaments in the form of monofilament, filament yarn, staple, or tow
325222	Non-cellulosic organic fibers	Noncellulosic (i.e., nylon, polyolefin, and polyester) fibers and filaments in the form of monofilament, filament yarn, staple, or tow
325311	Nitrogenous fertilizer	Production of fertilizer through inorganic (Synthetic ammonia, nitric acid, urea, and ammonium compounds) or organic sources
327111	Vitreous china plumbing fixtures	Vitreous china plumbing fixtures and china and earthenware bathroom accessories, such as faucet handles, towel bars, and soap dishes
327112	Vitreous china and earthenware articles	Table and kitchen articles, art and ornamental items, and similar vitreous china, fine earthenware, stoneware, coarse earthenware, and pottery products
327113	Porcelain electrical supplies	Porcelain electrical insulators, molded porcelain parts for electrical devices, ferrite or ceramic magnets, and electronic and electrical supplies from nonmetallic minerals, such as clay and ceramic materials
327122	Ceramic wall and floor tiles	Includes mosaic and quarry tiles
327123	Other structural clay products	Clay sewer pipe, drain tile, flue lining tile, architectural terra-cotta, and other structural clay products
327124	Clay refractory	Clay refractory, mortar, brick, block, tile, and fabricated clay refractories, such as melting pots. A refractory is a material that will retain its shape and chemical identity when subjected to high temperatures and is used in applications that require extreme resistance to heat, such as furnace linings.

Qualifying Industry Descriptions

NAICS	NAICS Name	Description
327125	Non-clay refractory	Nonclay refractory, mortar, brick, block, tile, and fabricated nonclay refractories such as graphite, magnesite, silica, or alumina crucibles.
327211	Flat glass	Flat glass made by melting silica sand or cullet (includes integrated facilities that also produce laminated glass)
327212	Other pressed and blown glass and glassware	Glass made by melting silica sand or cullet and products made by pressing, blowing, or shaping glass or glassware (except glass packaging containers); Also includes fiber optics
327213	Glass containers	Glass containers for commercial packing and bottling, and for home canning, including bottles and jars
327310	Cement	Portland, natural, masonry, pozzalanic, and other hydraulic cements; manufacturers may calcine earths or mine, quarry, manufacture, or purchase lime
327992	Ground or treated minerals and earth	Calcining, dead burning, or otherwise processing beyond beneficiation, clays, ceramic and refractory minerals, barite, and miscellaneous nonmetallic minerals
327993	Mineral wool and fiberglass insulation	Mineral wool and mineral wool (i.e., fiberglass) insulation products made of such siliceous materials as rock, slag, and glass or combinations thereof
331111	Iron and steel mills	Steel production, direct reduction of iron ore, manufacture of pig iron, conversion of pig iron into steel; includes both BOF and EAF; includes integrated facilities that also manufacture shapes (e.g., bar, plate, rod, sheet, strip, wire) or form tube and pipe
331112	Electrometallurgical ferroalloys	Ferroalloys add critical elements, such as silicon and manganese for carbon steel and chromium, vanadium, tungsten, titanium, and molybdenum for low- and high-alloy metals
331210	Iron and steel pipe and tube from purchased steel	Welded, riveted, or seamless pipe and tube from purchased iron or steel
212210	Iron ore mining and processing	Mine site development, mining, and/or beneficiation (i.e., preparation) of iron ores and manganiferous ores valued chiefly for their iron content and/or (2) sinter iron ore production (except iron ore produced in iron and steel mills) and other iron ore agglomerates
331311	Alumina refining	Alumina (i.e., aluminum oxide) refining generally from bauxite
331312	Primary aluminum production	Aluminum production from alumina; includes integrated facilities that also roll, draw, extrude, or cast the aluminum into primary forms (e.g., bar, billet, ingot, plate, rod, sheet, and strip)
331411	Primary smelting and refining of copper	Smelting of copper ore and/or the primary refining of copper by electrolytic methods or other processes to makeprimary copper and copper-based alloys, such as brass and bronze, from ore or concentrates
212234	Copper and nickel ore mining and beneficiation	Mine site development, mining, and/or beneficiation (i.e., preparation) of copper and/or nickel ores, and recovery of copper concentrates by the precipitation, leaching, or electrowinning of copper ore
331419	Primary nonferrous metals (except copper and aluminum)	Primary production of nonferrous metals by smelting ore and/or by electrolytic methods or other processes; includes lead, gold, silver, titanium, zinc and magnesium
335991	Carbon and graphite products	Carbon, graphite, and metal-graphite products including fibers, brushes and brush stock, and electrodes for thermal and electrolytic uses

Methodology for Estimating Emissions

After identifying the manufacturing industries exposed to carbon leakage, we then estimated the emissions for these qualifying industries to determine the scope of required allowances to address the issue. We estimated the 2007 emissions based on available EPA and EIA data. Since sufficient emissions data are not available at a sub-sector level, we needed to make certain assumptions based primarily on electricity and fuel use to estimate emissions for qualifying industries.

Emissions (EPA's Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2007)[3]
(Million metric tons CO_2 Equ.)

	Fuel Combustion	Electricity	Industrial Processes	Other Emissions	Total
Total	3,350	2,397	328	992	**7,068**
Industrial	857	708			1,565
Manufacturing	802	614			1,416
Representative Industries	**391**	**222**	**158**		**771**
% of Total Emissions	5.5%	3.1%	2.2%		10.9%
% of 2012 Allowances *(Est. 5,775)*	6.8%	3.8%	2.7%		13.4%

- We started with the EPA 2007 emissions for the Industrial sector, broken out between combustion and electricity.
- Using the EIA's Annual Energy Outlook 2008, we calculated the percentage of Industrial emissions that Manufacturing represented for electricity (87%) and for consumption (94%).[4]

[3] The Total and Industrial rows are from the EPA, remaining data is derived
[4] The Industrial sector is Manufacturing plus Agriculture, Forestry, Fishing, Hunting, Mining and Construction

Methodology for Estimating Emissions (continued)

- The next step was to allocate the overall Manufacturing emissions to each sub-industry of the Manufacturing sector to determine how many emissions our qualifying industries represent. To allocate electricity emissions, we applied the percentage of purchased and generated kWhs of electricity (from the ASM) for each sub-industry to the overall electricity emissions figure (612 million) for Manufacturing.

- To estimate the consumption emissions, we started with the manufacturing consumption figure derived from the EPA (806 million). We used the EIA's 2006 paper[5] to determine the initial allocation percentages. We first added up the emissions for all the fuel sources and calculated the percentage of the total for each industry. Over 90% of the consumption emissions are allocated to an industry. We allocated to sub-industries where necessary based on the emissions data given and then based on the fuel spend. For the remaining 8.6%, we allocated to the other industries based on fuel spend.

- We assigned/allocated the process emissions from the EPA to the individual industries.

- Definitions of emissions categories:

  - Fuel Combustion: Fossil fuel combustion to generate heat, steam or electricity to power industrial processes

  - Electricity: Indirect emissions from purchased electricity

  - Industrial Processes: Byproduct or fugitive emissions of greenhouse gases from industrial processes not directly related to energy activities such as fossil fuel combustion

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[5] Energy-Related Carbon Dioxide Emissions in US Manufacturing (November 2006; Mark Schipper)

Emissions for Qualifying Manufacturing Industries
(million metric tons CO_2 Equ.)

Manufacturing Industry	NAICS	Sub-Industry	Fuel Combustion	Electricity	Industrial Processes	TOTAL
Food	311221	Wet corn milling	14	6		19
	311313	Beet sugar	3	1		4
Textiles	314992	Tire cord and tire fabric mills	0	1		1
Wood Products	321219	Reconstituted wood products	2	4		6
Paper	322110	Pulp mills	2	1		3
	322121	Paper (except newsprint) mills	28	20		48
	322122	Newsprint mill products	2	2		3
Chemicals	325110	Petrochemicals	27	10	4	41
	325131	Inorganic dyes and pigments	1	1		3
	325132	Synthetic organic dyes and pigments	1	1		2
	325181	Alkalies and chlorine	11	14	2	26
	325182	Carbon black	5	1		5
	325188	All other basic inorganic chemicals	7	15		22
	325191	Gum and wood chemicals	1	0		1
	325192	Cyclic crude and intermediates	3	3		6
	325193	Ethyl alcohol	6	3		9
	325199	All other basic organic chemicals	52	24	6	82
	325211	Plastics material and resins	46	21		67
	325212	Synthetic rubber	2	1		3
	325221	Cellulosic organic fibers	1	1		1
	325222	Non-cellulosic organic fibers	3	4		7
	325311	Nitrogenous fertilizer	9	3	36	48
Non-Metallic Mineral Products	327111	Vitreous china plumbing fixtures	0.4	0.1		0
	327112	Vitreous china and earthenware articles	0.3	0.1		0.4
	327113	Porcelain electrical supplies	0.2	0.3		0.5
	327122	Ceramic wall and floor tiles	1	0		1
	327123	Other structural clay products	0.2	0.0		0.2
	327124	Clay refractory	0.3	0.2		0.5
	327125	Non-clay refractory	0.4	0.2		1
	327211	Flat glass	3	1	1	4
	327212	Other pressed and blown glass and glassware	2	2	0.4	4
	327213	Glass containers	3	2	1	6
	327310	Cement	29	8	45	82
	327992	Ground or treated minerals and earth	2	1		3
	327993	Mineral wool	2	3		5
Primary Metals	331111	Iron and steel	111	36	54	201
	331112	Electrometallurgical ferroalloy products	1	1		2
	331210	Iron and steel pipe and tube from purchased steel	1	1		2
	212210	Iron ore mining and beneficiation	3	4		8
	331311	Alumina refining	2	0.3	1	4
	331312	Primary aluminum production	4	17	7	28
	311411	Primary smelting and refining of copper	1	0.4		1
	212234	Copper and nickel mining and beneficiation	1	3		4
	331419	Primary nonferrous metal (except copper and aluminum)	1	3	4	7
Electrical Equipment	335991	Carbon and graphite products	0.5	1		1
			391	222	158	**771**

Fuel Combustion: Fossil fuel combustion to generate heat, steam or electricity to power industrial processes
Electricity: Indirect emissions from purchased electricity
Industrial Processes: Byproduct or fugitive emissions of greenhouse gases from industrial processes not directly related to energy activities such as fossil fuel combustion

Frequently Asked Questions

- Why use energy intensity rather than emissions?
  For purposes of identifying qualifying industries, as opposed to calculating the number of allowances to be awarded, energy spending arguably is a better metric than emissions to determine the financial impact to manufacturing industries of greenhouse gas legislation. For instance, firms may be impacted by the increases in the cost of natural gas that will be inversely related to natural gas's relative carbon intensity advantage. Any emissions metric also will depend on an assumed allowance price, which is difficult to estimate. In addition, emissions data is not readily available at a detailed industry level. There are 473 Manufacturing sub-industries (6-digit NAICS). No known resource provides emissions data, or even detailed fuel usage data from which emissions could be derived, at a level of detail anywhere close to that. In any event, energy spending serves as a reasonable proxy for emissions since combustion emissions are a function of the energy used, varying only by the mix of fuels.

- Why use the Census's ASM rather than EIA's MECS?
  The most recent data for the MECS Survey is from 2002 rather than from 2006 for the ASM. Additionally, the ASM provides data on a much more granular NAICS level than the MECS Survey does. For the 473 NAICS sub-industries (6-digit), MECS provides energy data for only 39 at the 5- or 6-digit level. ASM provides 2005 or 2006 energy data for 472 of the 473 industries (Petrochemicals is the only one with no data) at 5- or 6-digit level. We have validated our results against MECS and in the case of Petrochemicals, we used the MECS data.

- Why is Imports in both the numerator and the denominator of the trade intensity formula?
  The size of any US market in which a manufacturer competes equals Domestic Production + Imports, where Exports are a subset of Domestic Production. Using Imports in the denominator of the trade intensity formula keeps the ratio from exceeding 100%. Note: We have used the same ration that is used by the EU.

- How is the variability from year to year in energy intensity and trade intensity addressed?
  We used the maximum of the three years (2004-2006) for energy intensity and trade intensity, which minimizes situations where an industry may qualify one year and not another. However it should be noted that these metrics have very little variability from year to year. The average annual change in energy intensity is only 0.2%. The average annual change in trade intensity is only 3%.

Chairman LEVIN. Thank you very much.
Mr. Gerard.

STATEMENT OF LEO W. GERARD, INTERNATIONAL PRESIDENT, UNITED STEELWORKERS

Mr. GERARD. I thank you, Mr. Chairman. I said he was really fast. On my watch he took 3½ minutes. I hope I can get his 1½ minutes because I am not near that fast.

Let me thank you, Mr. Chairman, for holding in hearing. As you said, my name is Leo Gerard. I am the International President of the United Steelworkers Union. We have 850,000 members in North America, and our name actually belies the members we represent. We are the dominant union in the paper sector, in box making, in glass, in ceramics, in cement, in chemicals, aluminum, tires and rubber. We are an important but not dominant union in auto and auto parts, and obviously we are the dominant union in the steel industry.

The one thing all these industries have in common is they are pretty much all energy-intensive industries and that they all rely on current science to make the best products they can make. And our concern, and we are here today to express our concern, and let me say that we are not Johnny-come-latelys to the global warming debate. We held our first anti-pollution conferences in the early 1960s. We produced a document in 1990 called Our Children's World, and in 1990 we said the global climate change was going to be the most important issue facing our generation. We reissued a newer paper in 1996, called Securing our Children's World. Both of these are easily accessible, and we would be happy to provide them to you. And part of our concern clearly is that we have to address the issue of global warming, but we have to do it in a way that will return America's leadership and reassert our leadership on cutting-edge technology.

We can only do that if we move forward in a way that creates jobs, doesn't cost us jobs, and we believe that we can't end up having some kind of a system that doesn't deal with the issue of carbon leakage, and that system could only be answered if we have a program that doesn't squander jobs through the law of unintended but not unforeseen consequences of having a carbon-costing system that doesn't recognize that the issue is called global warming. It is not called Michigan warming or Chicago warming or Pittsburgh warming or Texas warming; it is global warming.

So to us one of the fundamental issues, if we are going to be serious about the issue of global warming, is that we have to first and foremost understand that it is an issue that works around trade and that we were, as I said, one of the first unions to support comprehensive climate change. We were one of the first unions to support comprehensive climate change legislation with our support of the Bingaman-Specter bill. We are also founding members of something called the Apollo Alliance that a lot of you have heard about, and we are founding members of the Blue-Green Alliance with our friends from the Sierra Club.

When we formed that alliance, there was Carl Pope and I at a press conference and no one else showed up. Our alliance has now grown to represent more than 4 million people from both the environmental and the labor community, which brings us to a clear understanding that we have to deal with climate change and we have to do it in a way that protects jobs and advances the agenda.

I will be limited to the 5 minutes. So while we are still undertaking the enormous and critical task of crafting climate change legislation, it is very clear to us that Congress must ensure that the desired emissions reductions are achieved in a structured and responsible way. The legislation must not only strive to reduce emissions to the level that best science believes is necessary, but it must also do so in a way that minimizes costs to businesses and consumers as much as possible. It must address the need to provide incentives to build the next generation of clean energy products here in America and need to ensure that domestic exporters are not unfairly disadvantaged in the global marketplace.

Many will say that our economy is based on exports, but I remind those that say that that America last year had a $700 billion trade deficit and we have lost close to 4 million jobs to rotten trade deals and we are carrying a $600 billion export of our financial resources as we service a $6 trillion accumulated trade debt. I don't want to stray, but I felt it was important to make that point.

As I said, we represent energy-intensive industries, and steel and cement are two examples where the science and the technology do not exist to remove carbon from that process. If you are going to make steel or you are going to make cement, you are going to make carbon. And the reason I raise that is that we just released a study yesterday with the Alliance for American Manufacturing, that again is here and we will be glad to make available to you, that points out that for every ton of steel that we produce and the same ton of steel produced in China produces three times as many units of carbon. So that if we don't deal with the issue of carbon leakage and we don't deal with the issue of using the best and current science and we don't deal with the issue of how we can create an environment with those companies that at this point don't have the technology or the science to overcome that, what we will do is cost ourselves both jobs and we will make the climate worse.

In our work with the Sierra Club we are very cognizant that our objective has to be to tackle the issue of global warming and that whether that is the issue of illegal logging done by China so that they can destroy the world's forests that are, in fact, carbon sinks, yet export their products to America after not meeting those challenges, those are huge, huge challenges that we need to take on.

I won't spend a lot of time rehashing the issue of carbon leakage. I think we are making it real clear. In industries like steel, glass, chemicals, rubber, and paper, this threat is particularly acute because they are commodity-based industries in which even a small difference in energy costs can have a huge effect. Finding a way to mitigate the competitive disadvantage that we would have that would be placed on these industries is an imperative if we are to continue the recovery from the current recession and achieve a goal of stopping and reversing climate change.

As I said, this is a global problem. This is a problem that if we try to do it ourselves, we will end up making the climate circumstances worse and we will cost more American jobs.

The fact of the matter is that there are a number of vehicles that are being discussed right now and options to combating leakage. We are pleased that there appears to be a growing consensus forming around the idea that something must be done to address this leakage problem in formulating climate change policy. A variety of solutions have been proposed, many of which fall into the broad categories of various allocation schemes.

The various proposals to address the leakage issue take different paths to the same goal, which is the elimination of cost disadvantage that a carbon-costing program will impose on domestic producers. Many of the programs that focus on reducing the cost of domestic producers as much as possible usually accomplish this by providing free allowances or rebates to manufacturers that are at risk of leakage. Previous climate efforts such as the 2008 Lieberman-Warner bill have included provisions that reserve a certain percentage of the total universe of allowances to be distributed to energy-intensive industries free of charge.

I think that if I run through all of these options I will actually run out of time. I will be happy to save that.

Chairman LEVIN. I think there will be some questions. Mr. McMackin was good enough to yield to you some time. That may be a first, by the way.

Mr. GERARD. Let me just say that for us this is a very simple issue. A, we believe that we have to do something about climate change. B, we have to use the best science available. C, we have to recognize it is called global climate change. D, we have to make sure that in doing so we don't create carbon leakage. E, we have to make absolutely sure that we don't put another nail in the coffin of America's manufacturing sector.

We view this as a complicated process, and we will certainly be willing to work with anyone and everyone that is willing to help us get to that solution. So thanks for your time, Mr. Chairman.

[The statement of Mr. Gerard follows:]

Statement of Leo W. Gerard, International President, United Steelworkers

Good afternoon. On behalf of the 850,000 active members of the United Steelworkers (USW), I would like to thank Chairman Levin for holding this hearing on the challenges to the competitiveness of domestic manufacturers and workers posed by the adoption of comprehensive climate change legislation. I am Leo Gerard, the International President of the USW. As you know, the members of the United Steelworkers produce more than just steel. They supply almost every sector of the economy, including the North American auto industry, and produce a wide array of products, including paper, glass, ceramics, cement, chemicals, aluminum, tires and rubber. Our members produce these energy-intensive products in facilities that are as efficient as any in the world. They are ready to answer the call to produce the next generation of clean energy products and parts, and reassert America's leadership on the cutting edge of new technology. But they can only answer that call if their jobs are not unnecessarily squandered to the law of unintended, but not unforeseen, consequences. Amid this economic collapse, this country cannot afford to lose any more jobs.

For decades, the USW has been a leader in the labor movement on the environment. In 1990, we published "Our Children's World" stating our union's environmental policy and the need to address climate change, and in 2006 we reaffirmed our union's commitment to environmental responsibility through the publication of "Securing Our Children's World." [1] We were one of the first industrial unions to support comprehensive climate change legislation, with our support for the Bingaman-

[1] Available on USW's website through the following links; http://legacy.usw.org/uswa/program/content/1592.php and http://legacy.usw.org/usw/program/content/Environment-SOCW.php.

Specter bill. That bill proceeded from recommendations made by the National Commission on Energy Policy, on which I serve as a commissioner. USW is also a founding member of the Blue-Green Alliance, which brings together unions and environmental groups to plan a new way forward for America through the promotion of policy solutions that spur growth and investment in green technologies and products produced here in America.

The Steelworkers are as convinced today as we were in 1990 that climate change is the most important environmental issue of our lifetime. It is the challenge of our time to transform the way this nation operates in order to bring this problem under control before it is too late. Still, in undertaking the enormous and critical task of crafting comprehensive climate change legislation, Congress must ensure that the desired emissions reductions are achieved in a structured, responsible way. The legislation must not only strive to reduce emissions to the level that the best science believes is necessary, but it must do so in a way that minimizes costs to businesses and consumers as much as possible. In doing so, attention must be paid to the need to provide incentives to build the next generation of clean energy products here in America, and the need to ensure that domestic exporters are not unfairly disadvantaged in the global marketplace. It must take into account that, for some products like steel and cement, some emissions are an unavoidable part of the manufacturing process, and that currently neither science nor technology exists to mitigate them. And it must ensure, as much as possible, that the jobs that exist here today in energy-intensive manufacturing are not lost, nor the production of those products offshored unnecessarily by neglecting the very real and potentially disastrous problem of carbon leakage. If leakage is not addressed in the development of a climate change regime, any policy runs a significant risk of not only costing American jobs but actually exacerbating, instead of mitigating, the problem of global warming.

Carbon Leakage

The phenomenon by which emissions reductions in one country lead to increased emissions in another is known as carbon leakage. The reason this happens is that if one country puts a price on carbon emissions, that additional cost provides an incentive to the company to move its production and, therefore, its emissions, to a country where that additional cost does not exist. All policy proposals to address climate change, including cap-and-trade, arise from the idea that if a price is put on carbon, it will provide an incentive to emit less carbon. This theory is sound, as long as the cost cannot simply be evaded by companies moving production overseas or by downstream producers and consumers avoiding the cost by purchasing imported materials from nations that do not share the U.S.'s commitment to climate change abatement.

This threat of leakage is particularly acute among manufacturers of energy-intensive primary products like the ones made by members of the Steelworkers. In commodity-based industries like steel, glass, chemicals, rubber, and paper, even small differences in production costs can devastate an industry if they are not managed effectively. Finding a way to mitigate the competitive disadvantage that will be placed on these industries is not only an imperative, if we are to continue the recovery from the current recession, but it is an imperative if we are to actually achieve the goal of stopping climate change.

Greenhouse gas emissions and the resulting climate change are a global problem, and it makes no difference whether the emissions occur here in the U.S. or abroad. In fact, the shifting of these emissions to countries that do not share our commitment to addressing the problem of climate change is almost certain to make the overall problem worse. The reason for this is quite simple: American industry and American workers are among the best in the world, and they produce energy-intensive goods with some of the lowest emissions in the world. The same cannot be said of many of our competitors. The Alliance for American Manufacturing, a unique labor-management joint venture between the Steelworkers and several of our major employers, released a report yesterday on the pollution levels in the Chinese steel industry, and the findings are quite stark.[2] For example, while the American steel industry has become 25 percent less energy intensive over the past 20 years, the Chinese steel industry now emits as much carbon as the rest of the global steel industry combined. The production of a ton of steel in China generates more than three times the carbon emissions of a ton of steel produced in the United States. This is largely because the domestic industry is increasingly state-of-the-art and efficient, while the Chinese steel industry has a heavier reliance on older, dirtier production methods and uses higher-sulfur coal to power those processes. The Chinese

[2] Available on Alliance for American Manufacturing's website through the link http://www.americanmanufacturing.org/assessment-of-china.

Government looks the other way while this goes on, and is lax in enforcing the few environmental laws and regulations it does ostensibly have in place.

Any climate change policy that does not seek to prevent the unnecessary offshoring of production from state-of-the-art American industries to less efficient, more carbon-intensive industries overseas will both cost American jobs and, perversely, will actually make the problem of global climate change worse.

Options for Combating Leakage

The USW is pleased that a growing consensus is forming around the idea that something must be done to address the leakage problem in formulating climate change policy. The question that follows is exactly what that something should be. A variety of solutions have been proposed, many of which fall into the broad categories of allocation schemes and trade mechanisms.

Allocations

Because leakage is caused by the fact that the domestic industry will be bearing increased costs of production due to the requirement to pay an imposed cost of carbon, many proposed solutions center around the concept of mitigating those costs. These ideas are structured as allocations of allowances to industries that are at risk of leakage, which means energy-intensive and trade-exposed industries. The European cap-and-trade program relies exclusively on allocations to combat leakage.

Previous domestic efforts, such as the 2008 Lieberman-Warner bill, have included provisions that reserve a certain percentage of the total universe of allowances to be distributed to energy-intensive industries free of charge. This structure is less than ideal because the allocation of no-strings allowances provide little incentive to companies to avoid offshoring. The potential for a company to take its free allowances, sell them on the allowance market, and use the windfall profits to build factories in India, Mexico, Brazil or China is a serious concern. In addition, even those companies that use the allocations as intended still face a long-term leakage threat. Most allocation proposals decrease the percentage of the cap reserved for allocations over time, which would allow foreign competitors to wait out their domestic counterparts until the supply of free allowances runs out. Even those proposals that maintain a consistent percentage of the cap for allocations face the same problem, as the cap will get smaller and smaller, as will the total number of available allowances the consistent percentage represents.

While allocations are critical for the survival of energy-intensive manufacturers, they must be structured to provide an incentive to maintain or increase domestic production, and must eliminate the potential for windfall profits, particularly profits which can be used to facilitate offshoring.

Trade Mechanisms

Where allocation schemes seek to even out the cost differential between domestic and international products by reducing the effective cost to domestic producers, trade mechanisms do the opposite. An effective trade mechanism would eliminate the cost differential by requiring that any import that enters our market face the same cost as domestic counterparts for those emissions not covered by an allocation scheme.

The most prominent of these proposals is the international reserve allowance program in the Lieberman-Warner bill. Between the introduction of the bill and the version improved by Senator Boxer, the international reserve allowance program was refined and improved a great deal, but more work needs to be done before it can fully address leakage concerns. A workable trade mechanism must give consideration to downstream products and exports. It must require that all products consumed in the U.S. demonstrate the same commitment to combating climate change, no matter where they are produced. And it must be put in place as quickly as possible, to limit the amount of time that domestic producers face cost disadvantages because of the requirements of the domestic program. If it is not possible to begin both programs at the same time, then steps must be taken to prevent unnecessary harm to domestic industries until such time as the trade mechanism can be activated.

Access to our consumer market is the most powerful incentive the U.S. has to encourage other nations to commit to reduce climate change. It must be used in a strong and effective manner.

Hybrid Approach

The shortcomings of both the allocation approach and the trade approach are similar. Namely, this is a global economy that faces a global crisis, and there are limits to what any one country, even the United States, can do alone. The U.S. should, therefore, attempt to forge a global solution to the issue of how to deal with energy intensive manufacturers. This should take the form of global sectoral agreements within the larger global climate treaty being negotiated by the U.N. Framework Convention on Climate Change. Only by setting up a system where all products must bear a carbon cost commensurate with its carbon emissions, no matter where they are produced, can the playing field ever be truly leveled and allow us to confront this global problem.

With that as the long-term goal, the short-term goal should be to craft a hybrid approach of allocations and trade measures that increases the potential that such agreements can be reached, while still addressing the leakage and competitiveness questions and ensuring that industry has sufficient incentive and confidence to maintain domestic production here, while continuing to improve its operations, until such agreements can be reached.

In this hybrid approach, allocations could be awarded to energy intensive manufacturers commensurate with their output and their carbon emissions. If allocations diminish over time or are insufficient to eliminate the leakage problem, they can be combined with appropriate border adjustments to equalize costs for domestic and foreign goods consumed in the United States based on their associated emissions. A phased-in, hybrid approach could provide the space for both the negotiation of an international agreement—which should start upon passage of the legislation—and providing sufficient notice to the rest of the world of the eventual imposition of a meaningful trade mechanism, while preventing domestic producers from facing unnecessary competitive pressures during that time. In addition, the hybrid approach can be designed to address the problems of downstream products and exports by ensuring that costs to inputs are minimized, and thus downstream products do not see an additional cost disadvantage. Similarly, if exported goods do not face a disadvantageous cost differential abroad, their competitiveness in global markets should not be harmed.

After the negotiation period is over, a variable border adjustment will be imposed on imports. This adjustment will be imposed on imports that enjoy a cost advantage over domestic products because of lack of action on climate change. It will be based on the carbon intensity of these products and the net cost borne by domestic manufacturers of those same products.

It is a simple concept. The right to sell goods to consumers in our market brings with it the responsibility to confront the costs associated with addressing climate change.

If the output-based rebates are working as intended and meeting the competitiveness needs of energy-intensive manufacturers, the border tax adjustment will lay dormant. Similarly, if sectoral agreements are forged and work as intended, this will be a tax that no one has to pay. That is the goal, and the border tax adjustment is envisioned to be a last resort, put into use only if and when the allocations are insufficient, or the sectoral agreement is not enforced.

An Alternative Approach

Hybrid approaches, allocation schemes, and trade mechanisms that could face WTO challenges are all quite complicated ways to address the questions of leakage and competitiveness. The questions themselves largely stem from the fact that the architecture of a cap-and-trade system is focused on the production of goods, but the global economy is focused on the consumption of goods. An alternative approach for energy-intensive manufacturers would be to create a separate emissions regime for these industries in which the inefficient allowance-based system is replaced with a simpler and more effective system in which emissions fees are assessed on all carbon-intensive goods consumed in the U.S. if their associated carbon emissions exceed a determined industry standard.

The potential benefit of such a system would be that the leakage problem would be effectively eliminated, because the focus would be shifted to ensuring that all products consumed in the U.S., regardless of where they are made, demonstrate the U.S.'s commitment to addressing climate change. Domestic manufacturers would face incentives to reduce emissions in order to bring emissions under the standard and avoid the tax. At the same time, they would not face unnecessary competitiveness concerns because equivalent costs can be assessed at the border on imports and rebated on exports, in much the same way as a value-added tax. In addition, the transparency of these fees would help industry attract the necessary capital to make improvements, because future costs could be more easily determined using an established fee rate than in attempting to divine the price of a volatile market in carbon allowances.

Conclusion

Addressing the potentially catastrophic issues posed by climate change is the challenge of our generation, and meeting that challenge will require the mobilization of everyone in the world behind a common purpose. America can and must lead this effort, not only by taking a bold stand to limit greenhouse gas emissions, but by harnessing this nation's greatest resource, the ingenuity and creativity of the American people. We must make a national commitment to rebuild America clean and green with products built here, to develop new forms of clean, renewable energy and provide incentives to further their deployment. We must bring our power grid and energy infrastructure into the 21st century and train the American workforce to use these new technologies. We must create a revolution in our transportation sector, rebuilding the American auto industry to produce the best and cleanest vehicles in the world, and connect America's cities and neighborhoods with world class transit systems. And, of course, we must limit greenhouse gas emissions consistent with what the best science tells us.

In creating a program to achieve these emissions reductions, we must make the development of manufacturing a centerpiece of that program. The products made by our members and millions of other hard-working Americans are quite literally the building blocks of all these new technologies. If the U.S. is to build windmills, we will need steel and aluminum. If we are to build solar panels, we will need glass. And if we are to build the next generation of industrial scrubbers to filter out these emissions, the ceramics industry cannot be ignored.

When the world transitioned to an industrial economy, America led the way by developing and producing the best products in the world. Now, as the world transitions again to a green economy, the time has come for America to lead again. This change will not come easily, and it is a heavy load to bear. But I am here to tell you today that American workers are ready and willing to help bear that burden and help lead America into a new, green future.

Thank you again, Mr. Chairman, for holding this hearing. The United Steelworkers and I look forward to working with you and the committee to renovate our economy to meet these challenges.

Chairman LEVIN. Thank you very much.

Mr. Hamilton, if you will take over.

STATEMENT OF DAVE HAMILTON, DIRECTOR OF GLOBAL WARNING AND ENERGY PROGRAMS, SIERRA CLUB

Mr. HAMILTON. Thank you very much, Mr. Chairman. My name is David Hamilton, and I am the Director of Global Warming and Energy Programs at the Sierra Club, and we thank you for this opportunity to address this Subcommittee and talk about the critical issue of carbon leakage and how energy-intensive, export-driven companies fit into a carbon control program.

I think the one thing that we are all going to stress here is that a carbon control program that includes a lot of leakage is not doable politically. It is not going to work. It is not—you will simply export emissions so you don't reach your environmental goal, and you will lose jobs so you will lose on your economic goal.

Mr. Chairman, I would like to acknowledge you for your work on the May 10 agreement and connecting the importance of environment and workers in the context of trade agreements. I want to acknowledge President Gerard and the fact that the Sierra Club has been working closely with the Steelworkers for many years now and we formed the Blue-Green Alliance together. The Sierra Club goes back to working on NAFTA and other trade issues to really try to break through on the importance of environmental considerations in the context of trade.

I believe that we are standing at a particularly unique and difficult moment in history where we have to look over the landscape of a very difficult economy to solve an incredibly difficult environmental problem in global warming. We believe that there is opportunity with this adversity and that we are headed for—you know, to turn our ship in the direction of a green economy and new industries and new exports, and that result is a way that we can, in fact, prosper over the long haul while really taking on carbon emissions in a way that allows us to live on the planet for the foreseeable future.

As I said, leakage is an environmental problem if emissions are simply exported. Any plan that simply moves jobs overseas is going to fail. We support ambitious targets for reducing carbon emissions 80 percent by 2050, and any program like that is likely to result in cost increases for energy-intensive industries. We have to make sure that those costs are dealt with in a way that doesn't simply make our manufacturing landscape increasingly barren.

We believe that the best protection against leakage is a strong global agreement to reduce carbon emissions under the United Nations Framework Convention on Climate Change. That agreement should include sectorial sub-agreements that cover the various energy-intensive industries. That could be aligning emissions targets. It could be agreeing to share its standards or harmonizing policies. We don't believe that we get a global deal unless the U.S. makes a firm commitment to reducing its own emissions, and until such a global agreement can be reached there must be a domestic apparatus to make sure that in the short term between U.S. commitment and a global deal that we don't see the kind of leakage that we are trying to avoid here.

A couple—I think we are all going to cover the alternatives a little bit. I will try to run through some of the advantages and disadvantages there of both financial adjustments and potential border correction mechanisms. One idea under a cap is to give additional free allowances to energy-intensive manufacturers to try to mitigate the extra cost that they will be under. We believe this must be structured to reward retention of domestic employment and to reward increased energy efficiency and emissions reductions. I think we view free allowances in this context as the same as free allowances in other contexts, which is we don't want to see windfall profits because we don't want to see those free allowances ultimately fund the next factory in Asia.

There is discussion of output-based rebates. This is a very fine tool as described by Congressmen Inslee and Doyle in their legislation last year. This potentially solves a lot of problems, but it is also potentially very complicated, and the information that you need from companies is information they aren't always anxious to be forthcoming with, but we agree that this is a promising area to work for.

Border mechanisms, you know, people have talked about a tax on energy-intensive goods that would simply be levied at the border for goods coming into this country. The advantage is that it is simple. It is doable. One thing we are apprehensive about is that you would have to take these industries out from under the cap and then either compensate the emissions they were supposed to get with other regulated entities under the cap or somehow get emissions out of that sector in another way.

And we talked about the IBEW proposal, which is a border adjustment under the cap where companies trying to sell goods into this country would have to buy allowances and present allowances under our carbon cap.

We believe that all of these have the tools to work. They have the tools to be WTO compliant. But, again, we believe that a combination is workable but that fundamentally the key to this problem is a global agreement that has sectorial agreements for specific energy-intensive industries and we aren't going to get that deal unless we actually make a commitment in this country. And if we move forward and show progress, we think that the possibility is strong for action in Copenhagen and hope that you will contribute to action in that direction.

Thanks very much.

[The statement of Mr. Hamilton follows:]

Testimony of David Hamilton, Director of Global Warming and Energy Programs, Sierra Club

Subcommittee on Trade of the Committee on Ways and Means

The potential effects of climate change legislation on the competitiveness of domestic energy-intensive industries

March 24, 2009

Thank you for the opportunity to address the Subcommittee on the importance of providing a fair and effective system to address the potential effects of a carbon control regime on U.S. energy intensive industries and their international competitiveness.

My name is David Hamilton and I am the Director of Global Warming and Energy Programs for the Sierra Club. The Sierra Club is the nation's oldest, largest, and most influential environmental organization with 1.3 million members and supporters. We have chapters in 50 states and tens of thousands of volunteers across the country that put their personal time into protecting and improving the environment of their communities, states and the nation as a whole.

We are at a unique and very difficult point in history. During a time of economic emergency, we must address our emissions of pollution that is rapidly warming the planet and disabling many of the biological systems that have enabled life on Earth. This challenge also represents a unique opportunity to foster sustainable growth as we transition into a green energy economy, creating millions of jobs in the process.

Stemming Global Warming is Sierra Club's Top Priority

After focusing most of its efforts for more than a century primarily on protecting wild and special places, the Sierra Club chose global warming in 2005 as its top priority issue. That decision is continually reinforced by somber news from the scientific community. Nearly every day, more research emerges on the progression of warming and other aspects of climate disruption that the Intergovernmental Panel on Climate Change (IPCC) has identified as very likely resulting from the build-up of carbon dioxide and other gases emitted into the atmosphere through human activity.

We are in a race against time to reduce these emissions and slow their effects on the planet. As NASA scientist James Hansen and others have articulated, the continued warming of the planet will bring us to tipping points such as the thawing of Arctic tundra that lead to more and uncontrollable emissions of carbon dioxide – thus leading to more warming. If we lose this race to bring carbon-based warming under control, its effects will be out of our hands and all life on Earth will be faced with a severely altered home that will challenge nearly every aspect of society.

A Green Economy: Combating Global Warming and Creating Jobs

The Sierra Club has regarded the economic health of American wage-earners as a pre-condition for the nation's environmental health for many years. We have worked shoulder to shoulder with our partners the United Steelworkers and other unions to fight for real protection for both workers and the environment in international trade agreements going back to the development of North American Free Trade Agreement (NAFTA). We formed the Blue-Green Alliance with the Steelworkers that now includes the Communications Workers of America, the Service Employees International Union, and the Laborers International Union of North America, as well as Natural Resources Defense Council. In a steady and inexorable process, blue and green together increasingly recognize that quality of life for Americans is determined by both economic and environmental security.

I want to thank you Mr. Chairman, for your leadership in creating a new vision for our trade agreements, as demonstrated for example in the May 10th agreement which was a significant improvement in protecting workers and the environment. Just as we have insisted on a level playing field in our trade agreements, where workers' rights and the environment are protected, we must now ensure that there is no room for companies to relocate to countries with weaker climate legislation than ours. As outlined below, we believe we can accomplish this in a manner that is consistent with our current obligations in the World Trade Organization.

Emissions Leakage is a Critical Issue

I address you today to discuss the critical issue of how to control carbon dioxide emissions in the United States in a way that does not result in economic effects that spur an exodus of American energy-intensive industries.

The Sierra Club supports implementing a cap and auction mechanism that reduces carbon dioxide emissions at least 80 percent by 2050 to meet current scientific expectation of the U.S. share of reductions required to avoid the worst predicted effects of global warming. That mechanism can logically be expected to raise costs for energy intensive manufacturing, although we are working to see a cap designed to minimize increases in energy costs. Leakage occurs if those costs cause that manufacturing base to simply move to nations that do not have similar controls on carbon. Currently we believe there is cause for concern that this will be a problem in the energy intensive manufacturing sector. Given the highly global nature of these industries, it is reasonable to guard against such an outcome in both the domestic and international attempts to address climate change. We want to protect against off-shoring both because we want to maintain our domestic manufacturing base and because we want to protect the environment.

We have already seen a steady growth in emissions related to the production of exports. In 2005, 33 percent of China's domestic CO_2 emissions were in the production of exports, while in 1987 this number was only 12 percent. Recent research has also shown that Chinese exports are responsible 6 percent of global greenhouse gas emissions in 2005.[1]

Illegal logging

An example of how unregulated trade has had severe negative impacts on jobs, communities and the environment can be found when examining the pulp and paper industry, and the connections to trade in illegally harvested timber. Deforestation accounts for 1/5 of global greenhouse gas emissions[2], and protecting the world's forest resources is a cornerstone in preventing the most catastrophic impacts of climate change.

Among the causes for deforestation is the fact that there is a large unregulated market place for wood and timber products with few meaningful incentives for stopping illegal logging and the associated trade in these illegally harvested products. In addition to contributing dramatically to global warming, there are also significant effects on workers and the economy. Over the past few years, thousands of jobs have been lost in the U.S. paper industry as paper mills and converting facilities have been shut down. The paper industry conservatively estimates a loss of $1 billion a year as a result of the import of illegally harvested timber and wood products[3]. ILO studies have found that forest workers in countries such as Peru are frequently working under forced labor conditions[4].

The Sierra Club has worked with the United Steelworkers to address the issue of trade in illegally harvested timber and wood products, including through a 2006 petition to the Department of Commerce asking them to investigate whether the sustained non-enforcement of Indonesia's forestry laws constitutes a subsidy. Since that time, Sierra Club and USW have worked together to explore ways to strengthen U.S. trade laws so they can better address illegal logging.

To combat trade in illegally harvested timber as well any other unfair trading practices that occur, we must aggressively pursue policies that ensure a level playing field between domestic and foreign producers. In addition to utilizing our existing trade rules, we also believe that domestic climate legislation must include measures that eliminate any competitive disadvantage U.S. companies might be faced with as a result of the legislation.

Downstream Products

Any mechanism to minimize penalty to domestic manufacturers for compliance with a carbon cap and auction program must address the problem of goods that arrive in the U.S. containing

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[1] Weber, C.L., etal., *The Contribution of Chinese Exports to Climate Change*, 2008

[2] Nicholas Stern, The London School of Economics and Political Science, *Key Elements of a Global Deal on Climate Change*

[3] America's Free Trade for Illegal Timber, June 2006, Environmental Investigation Agency, *http://www.eia-international.org/files/reports118-1.pdf*

[4] Alvaro Bedoya Silva-Santisteban and Eduardo Bedoya Garland, International Labour Organization, *Forced Labor Wood Extraction in the Peruvian Amazon*, 2005

embedded emissions from non-comparable countries. For example, steel made in China that is converted into automobiles in Korea and that enter the U.S. by ship must be accounted for in a correction mechanism. Strong sectoral agreements within a larger global deal are the best way to address this problem.

The Best Protection for American Workers is a Strong Global Climate Deal

A strong global climate deal negotiated through the United Nations Framework Convention on Climate Change (UNFCCC) process is the best solution to competitiveness. A strong global deal that requires action to reduce emissions by all the largest emitters in the energy intensive manufacturing sector should be the goal of U.S. domestic policy, as well as the goal of our international negotiators. To reach this goal we need to bring a balanced proposal to the Copenhagen UNFCCC meeting in December of 2009. This package should include a strong domestic emissions reduction target, and we believe that the science justifies an absolute domestic emissions reduction from of at least 8-14 percent below 1990 levels by 2020.

However, a balanced international proposal will require more than just a domestic cap on greenhouse gas emissions. A full package should include financing for clean energy technology deployment, protections for forests in developing countries, and adaptation to unavoidable climate impacts, including a robust U.S. program of international global warming assistance for developing nations. These additional elements are essential components of the Bali Action Plan, negotiated last year by the Bush Administration through the UN process. In exchange for these elements, developing nations – including China -- have agreed to take measurable, reportable, and verifiable actions to reduce global warming.

There are Several Options Available to Domestic Policy Makers

The only real solution to the problem of emissions leakage is a global agreement by all major emitting countries to reduce emissions from the manufacturing to a negotiated level. The global deal negotiated in Copenhagen may include all of the building blocks necessary to forge a comprehensive solution to the energy intensive manufacturing sector. In order for a global climate deal to succeed, the U.S. must resume a leadership role in tackling climate change and demonstrate a significant commitment to actually reducing our own emissions. We can accomplish this by passing comprehensive climate legislation which puts a cap on our emissions, incentivizes investments in the green energy economy, and ensures that American companies are not put at a competitive disadvantage vis-à-vis countries that do not take similar action.

There are several options available to policy makers seeking to address the competitiveness problem. The goal of the competitiveness provisions in U.S. climate legislation should be to (1) prevent a decline in output or efficiency by U.S. producers in the face of higher costs, (2) guard against migration of U.S. manufacturing to other parts of the world, 3) ensure that no company reaps a windfall profit, while 4) not losing track of the big picture need to create incentives for other countries to reduce emissions.

It is possible to protect domestic manufacturers with a relatively small percentage of the value of the credits in the system. The main industries that comprise the globally competitive energy intensive sector (iron and steel, aluminum and copper, nonmetal mineral products (cement and glass), paper and pulp, and basic chemicals) account for more than half of all carbon dioxide (CO2) emissions from the manufacturing sector, though their direct emissions account for less than 6 percent of the U.S. total (WRI 2007). Efforts to solve this problem should be focused on these industries, however Congress should delegate to an agency some responsibility to ensure that any company compensated is in fact subject to global competition.

Allocation of Free Credits

Past climate bills have addressed increased costs to manufacturers by allocating free carbon credits to the globally competitive energy intensive manufacturers based on historical emissions. The concern with this approach is that it does not provide a direct incentive against off-shoring, and instead may increase profits that could be used to offshore later.

Any allowance-based allocation should provide a direct incentive to increase domestic employment and drive investments in the energy efficiency of the company. It should also be designed to avoid windfall profits, since it is possible that those profits could be used to finance off-shoring later. The best way to do this is to tie the rebates to the production-based output of the company and not directly to the pollution.

Output-Based Rebates

Another option being discussed is the use of output-based rebates to compensate energy-intensive manufactures for goods subject to international trade. This option has been suggested by Reps. Jay Inslee and Mike Doyle in H.R. 7146 from the 110th Congress. The Inslee-Doyle framework intends to encourage energy efficiency on the part of manufacturers by setting aside 15 percent of total allowances to compensate them not just according to their cost of compliance with a carbon cap, but also by their emissions intensity and electric efficiency. The successful application of output-based rebates would significantly reduce the possibility that companies can use carbon regulation as an excuse to offshore manufacturing facilities and American jobs.

An output-based rebate could be further improved by allocating only to the average international production per unit of pollution. With this system companies would not be compensated for emissions above the international industry average, giving them a further incentive to improve efficiency. If this approach proves too complicated it may be possible to benchmark to an international standard and then require efficiency improvements to qualify for a full allocation of allowances. In either case, allowance levels should decline over time, transitioning to full auctioning.

An important question is whether it would go too far. While the output-based rebate approach has the advantage of encouraging better carbon performance, it is complex and shares with the conveyance of free allowances the risk of providing windfall profits to manufacturers who have the ability to raise prices in response to the enactment of a carbon control program. We also need to determine if the act of rewarding efficient producers would encourage inefficient producers unable to compete to leave the country rather than upgrade domestic facilities.

Border Taxes and Adjustments

A border tax or adjustment will be needed if industries in other countries fail to take comparable action to address climate change. A correcting mechanism may also be needed to protect against movement of manufacturing to countries that do not have comparable requirements on their domestic manufacturers even if a fair deal is reached with the major emitting countries in Copenhagen. Border adjustment measures only apply to imports to the U.S. and do not fully address competition in the global market where U.S. producers may face greater competition from foreign producers. The only complete solution to this problem is a global deal that addresses the manufacture of globally competitive goods.

We believe that a border tax or adjustment is best set up as a backstop against the failure of a global deal or to address emissions from countries that have not taken similar action by the time we phase out rebates or free credits. While a border mechanism would be part of the legislation from day one, it would phase in as other mechanisms phase out. Negotiating international sectoral agreements is also consistent with WTO rules, which require good faith negotiations before any border tax can be imposed.

Border corrections should not be applied to the least developed countries or to countries whose industries are determined to have taken comparable action (see below).

Border Taxes

A border tax would amount to replacing a cap and trade system with a carbon tax for manufactured goods from internationally competitive energy intensive industries. A national tax would be assessed on the emissions associated with the energy use of certain categories of goods and adjusted over time to achieve reductions comparable to that sought by a carbon cap. Even if the cap is lifted for internationally competitive energy intensive industries the emissions from this sector should be reflected in the reductions required by companies under the cap. The cap should be adjusted to reflect progress toward emissions reductions for taxed industries. The tax would be assessed equally on all emissions-intensive goods consumed domestically, including imports, based on their associated emissions. For imported goods, associated emissions could be calculated based on either firm-specific data or national averages.

There are already examples of how such border taxes have worked to protect the environment, while also being allowable under our WTO obligations. In 1989, as part of our obligations under the Montreal Protocol which was designed to protect the ozone layer by phasing out the production of ozone depleting chemicals (ODCs), Congress adopted production and consumption caps on ODCs, and enacted an excise tax on ODCs at the same time. The tax was imposed on the sale or use by a manufacturer, producer, or importer of any ODC, as well as on any product imported into the U.S. in which an ODC was used as a material in its manufacture or production.

The ODC excise tax was assessed on the same basis for domestic goods sold in the U.S. and for imported goods sold in the U.S. via a border adjustment tax on imports. The taxes were rebated on exports. This consumption-based excise tax drastically curtailed the use of ODCs. In 1990, the year the ODC excise tax was imposed, total CFC consumption dropped to 440 million pounds down from 700 million pounds in 1989[5]. It spurred industry to develop and use alternative chemicals and technologies, effectively protected the ozone layer, and was also compliant with GATT and WTO rules which allow indirect taxes to be adjusted at the border.

Border Adjustment

A border adjustment would use the apparatus of the cap to create the same kind of correction mechanism. Rather than pay a defined tax, it would require companies without comparable carbon restrictions to buy allowances at the border that reflected either firm-specific data on carbon emissions or national averages from the home country. Again, this is a potentially complex route and it does not have a WTO track record to give confidence of compatibility. But it should be possible to design such a system in conformity with WTO principles.

In addition, by virtue of the fact that most of our trade in energy-intensive goods is currently conducted with carbon-comparable nations, a border adjustment might create an increase in the proportion of such trade that is done with Canada and the European Union.

Comparable Action and Sectoral Agreements

We believe the issue of what constitutes comparable action is best addressed on a sectoral basis for developing countries and an economy wide basis for developed countries for the next commitment period of the international climate deal (2013 to 2017/ 2020). This approach is fair in that it allows developing countries to address the parts of their economy that they are most able to address, while still requiring more from the developed world for now.

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[5] Elizabeth Cook, ed., Ozone Protection in the United States: Elements of Success, World Resources Institute (Nov. 1996)

The short term goal of any competitiveness approach should be to promote international sectoral agreements. Under a sectoral agreement GHG standards would be negotiated within energy-intensive globally-traded sectors. For example, major steel-producing countries could agree on standards limiting GHGs per ton of steel, which could be differentiated initially according to national circumstances and converge over time. These agreements could form the basis for a cap on emissions from the sector in the near term and ultimately would inform economy-wide caps for developing countries. If international sectoral agreements initially require less of developing countries than domestic manufacturers, compensation for energy-intensive industries could be maintained at some level and phased out as the requirements for other countries rise to those borne by the United States.

Conclusions

A combination of rebates or allocations and border taxes or adjustments could effectively level the carbon playing field, but they will not create incentives for developing countries to reduce their domestic emissions or to cooperate in the negotiations. In order to successfully address concerns about the competitiveness of U.S. industry we must also negotiate a fair international climate treaty this year in Copenhagen. Both of these goals are made more achievable if we deliver a balanced and comprehensive climate bill.

Thank you for this opportunity to address the Subcommittee. We stand ready to address any questions you might have.

Chairman LEVIN. Thank you very much.

Mr. Pauwelyn.

STATEMENT OF JOOST H.B. PAUWELYN, PROFESSOR OF INTERNATIONAL LAW, GRADUATE INSTITUTE OF INTERNATIONAL AND DEVELOPMENTAL STUDIES, GENEVA SWITZERLAND

Mr. PAUWELYN. Thank you, Mr. Chairman, Members of the Subcommittee. I am very pleased to participate in today's hearing.

I understand that your core question today is this: How can the U.S. adopt climate change legislation and limit both carbon and job leakage? What I hope to add to the discussion is how any of this could be done in line with U.S. obligations under the World Trade Organization.

As Mr. Chairman said, I am Joost Pauwelyn and I am a Professor of International Law formerly at Duke Law School and now in Geneva, Switzerland, and I have worked for the WTO from 1996 to 2002. I am currently also a senior adviser with the law firm of King & Spalding.

Now, my core message to you today is this: First, the WTO allows its members to adopt climate change legislation and to deal with carbon and job leakage. People should stop using the WTO as an excuse to block climate change legislation.

Second, that WTO rules are flexible enough does not mean that tackling carbon and job leakage will be easy. It will not. I would focus on getting the data and economic incentives right, on cost effectiveness, on technical and administrative feasibility, and really WTO rules come in at the edges not as negative make-or-break rules but as positive controls; namely, to prevent discrimination and economic protectionism, two wasteful practices that would in any event not help the environment nor American jobs.

Now, let me try to explain my point at its most basic level. First, carbon leakage is an environmental concern. The WTO has an explicit exception that says that the environment trumps trade. So you have the right to tackle carbon leakage for as long as you do so to protect the environment, not to protect U.S. import-competing industries.

Second, job leakage is a fairness issue. It is about carbon equivalence. American jobs risk shifting overseas if U.S. companies must pay a carbon cost that imports do not have to pay. Now, here the WTO has a principle called national treatment, and this means that the U.S. can impose the national U.S. treatment of products also on like imported products. So, again, WTO members have the right to impose a carbon cost on domestic products, also on imports. The only prohibition is that you cannot impose a higher cost on imports. You cannot discriminate.

The following example should make my point of national treatment clear. If after this hearing I go and buy a few toys to bring home to my children and these toys happen to be made in China, would you not find it absolutely normal that these toys are, first, subject to the same U.S. safety regulations as applied to U.S.-made toys and, secondly, when I pay at the counter I will have to pay the same U.S. sales tax for my Chinese toys that would otherwise apply to U.S. toys? Now, when it comes to climate legislation and carbon pricing, the same principle applies. Imports can be made subject to the same burden that applies to U.S. products. That is what the WTO says.

Let me say a few words about the different alternatives available. As most people have said already, clearly the first best solution is to find an international agreement where all major emitters cut their carbon emissions, albeit at a variable scale. We must, however, prepare, and this is not just the U.S. but also Europe, for the world of second bests; namely, what do we do if countries like China, India, and Brazil do not cut their emissions?

Two options are available, in my view. First, the U.S. could soften the impact of climate change legislation on its own energy-intensive industries. Second, the U.S. could impose whatever burden it imposes on domestic carbon-intensive products, also on imports.

Just a few words on what the WTO would think about this. First, free allowances, softening the impact on U.S. carbon-intensive industries, can be designed in line with WTO rules. They can be designed so that the WTO does not look at them as subsidies that would somehow distort trade. One can design a scheme so as to avoid the label of financial contribution as well as that of benefit, the WTO requirements for there to be a subsidy in the first place. The contribution is not specific, and there is very likely no serious prejudice to other WTO members. All of these are conditions for a subsidy to be actionable.

Secondly, the second alternative, imposing a burden also on imports by, for example, obliging imports to buy emission allowances, again I am convinced one can do this, one can design this in line with WTO nondiscrimination principles. You just have to make sure that the same burden applies on the imports as is imposed on U.S. products and you have to make sure that the same burden applies on imports from one country as opposed to imports from another. Very importantly, that does not mean that you have to impose the same burden on all imports. If a country is in a different situation, you can treat it differently. So Europe could come in without credits. Chinese imports, if they do not cut their emissions, may be subject to allowance requirements.

So in conclusion, I am convinced that WTO consistent measures can be designed to address carbon and job leakage. The WTO is a positive control at the edges. It is not a make-or-break negative force.

Thank you.

[The statement of Mr. Pauwelyn follows:]

Statement of Joost Pauwelyn

Professor of International Law, Co-Director of the Centre for Trade and Economic Integration, Graduate Institute of International and Development Studies, Geneva (Switzerland) and Senior Advisor, King & Spalding LLP[1]

Testimony Before the Subcommittee on Trade of the House Committee on Ways and Means

March 24, 2009

Chairman Levin, Ranking Member Brady, and distinguished members of the Ways and Means Subcommittee on Trade, I am pleased to participate in today's hearing.

I understand that today's hearing is focused on how U.S. Climate Change legislation can limit both carbon leakage and job leakage, that is, maintain U.S. competitiveness.

What I hope to add to today's discussion is how these efforts could be undertaken in line with U.S. obligations under the World Trade Organization (WTO). By way of background, I have worked for the WTO, advising dispute panels and the WTO Appellate Body, from 1996 to 2002. After that, I became a tenured, full professor at Duke Law School here in the United States. In 2007, I returned to Switzerland to take up a professorship at the Graduate Institute of International and Development Studies in Geneva. At the same time, I have been advising the Washington office of the law firm of King & Spalding on matters of trade, investment and climate change, helping, among other clients, energy-intensive industries based in the United States to prepare for tomorrow's low-carbon economy. In early 2007, at the request of Duke's Nicholas Institute for Environmental Policy Solutions, I published a paper on *U.S. Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade*

[1] The views expressed in this testimony are my own and not necessarily those of the Graduate Institute, King & Spalding or any of its clients.

Law.[2] This paper was referred to extensively in, for example, last year's work of the House Committee on Energy and Commerce.[3] In 2008, I also edited a special issue of the Carbon & Climate Law Review on the topic of *Climate Change in a Global Economy*.[4]

Summary

My core message to you today is this. First, WTO rules are flexible enough to deal with both carbon and job leakage. People should stop using the WTO as an excuse not to tackle climate change. Second, even though the WTO should not stand in the way, fighting climate change will have costs, and addressing carbon and job leakage in a cost-effective and administratively feasible way will not be easy. The devil will be in the detail. Solutions to address carbon and job leakage must be carefully calibrated, and may vary, based on industry and country-specific data. In this process of finding appropriate remedies, WTO rules do have a useful, positive role to play, that is: To avoid wasteful protectionism or discrimination that serves neither the environment nor American jobs.

In sum, the WTO should not stop your efforts, but merely guide them as one relevant factor amongst many other, arguably more important, criteria such as cost-effectiveness, administrative feasibility and risk of circumvention.

Carbon and Job Leakage Are Real But Should Not Be Exaggerated

Although carbon and job leakage are often exaggerated, it is clear that they are a problem. If today the United States puts a limit on carbon emissions and countries like China or India do nothing, then evidence indicates that the production of some carbon-intensive goods, together with the jobs and emissions associated with them, will shift or

[2] April 2007, Working Paper 07/02, Nicholas Institute for Environmental Policy Solutions, Duke University, available at http://www.nicholas.duke.edu/institute/internationaltradelaw.pdf.
[3] Climate Change Legislation Design White Paper, Competitiveness Concerns/Engaging Developing Countries, January 2008, available at http://energycommerce.house.gov/Climate_Change/White_Paper.Competitiveness.013108.pdf.
[4] 1 Carbon & Climate Law Review 2008 (CCLR), Lexxion, Berlin.

leak from the United States to these other, unregulated countries. This leakage rate varies widely between sectors. For low-carbon products, the impact will be negligible. For some carbon- or energy-intensive industries the impact will be real.

One recent study finds that a price of $21 per ton of CO2 applied in Japan and the E.U.-15 (but not in other countries) would lead to a leakage rate of 55 per cent in the iron and steel sector. Another study finds that a price of $20 per ton of CO2 in a cap-and-trade system applied in the E.U.-27 offers leakage rates between 0.5 and 25 per cent in the iron and steel sector, and between 40 and 70 per cent in the cement sector. The exact numbers depend, among other things, on how allowances are distributed and the capacity for producers to pass-through higher production costs onto consumers. More pass-through capacity means less leakage: If I can pass-on the cost of carbon to consumers and consumers continue to buy, my company will not suffer. Pass-through capacity and thereby leakage is, in turn, determined by the intensity of foreign competition, market concentration and tightness, and the availability of substitutable products. This means that widely traded, fungible products such as cement, aluminum and steel will suffer more leakage than products locally produced and consumed.[5]

To give but one example in the European context as applied to the cement industry, at a price of 25 euros per ton of CO2, the cost of direct CO2 emissions for European cement producers (assuming all allowances were auctioned) would be 20 euros per ton of cement. This represents approximately 40 per cent of the total cost to produce a ton of cement. If this additional 40 per cent cannot be passed-through to consumers, many European cement producers will simply have to close shop.[6]

So, to the extent that carbon and job leakage is, indeed, a problem, what can we do about it?

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[5] Julia Reinaud, Issues behind competitiveness and carbon leakage, Focus on heavy industry, IEA Information Paper, IEA/OECD, Paris, 2008, at 4.
[6] Julia Reinaud, Industrial Competitiveness under the European Union Emissions Trading Scheme, IEA Information Paper, IEA/OECD, Paris, 2005.

The First-Best Solution Is an International Agreement to Limit Emissions Across Countries

The first-best solution is, no doubt, to conclude international agreements with countries such as China, India and Brazil that mandate those countries to also cut emissions and to price-in the cost of CO2 into their production processes.

When it comes to such international agreements, we must be realistic and fair. Given historical emissions and the head-room needed for developing countries to build up their economies, emission reductions should not, and will not be, the same for each and every country. The United States has ratified and is a party to the UN Framework Convention on Climate Change (UNFCC) (albeit not, of course, to the Kyoto Protocol) and in this convention all countries, including the United States, agreed to the principle of "common but differentiated responsibilities and respective capabilities".[7] This principle was, moreover, reconfirmed in the July 2008 G8 Hokkaido Toyako summit declaration.

Thus, if, for example, China were to agree to carry its share of the burden and to cut its emissions to a level that is fair and justifiable, Chinese producers would already bear the cost of carbon under Chinese legislation. In that case, and even though the cost would not be the exact same, both U.S. and Chinese steel and cement producers would be on something of a level playing field, carbon and job leakage would be limited and there would be no need to impose "carbon equalizing" tariffs or other requirements on Chinese imports.

Achieving "carbon equivalence" through such an international agreement would have the added benefit of avoiding WTO litigation or any other trade wars. As Pascal Lamy, Director-General of the WTO put it:

> I am of the firm conviction that the relationship between international trade – and indeed the WTO – and climate change would be best defined by a consensual

[7] Article 3.1 of the UNFCC.

> international accord on climate change that successfully embraces all major polluters. In other words, until a truly global consensus emerges on how best to tackle the issue of climate change, WTO Members will continue to hold different views on what the multilateral trading system can and must do on this subject. Only a consensual international accord can take them forward.[8]

We must, however, also be realistic in another way. Notwithstanding the principle of "common but differentiated responsibility", we cannot exclude as a possibility that in the Copenhagen climate change negotiations at the end of this year, some developing countries will simply refuse to carry their share of the burden. If this were to happen, what can countries like the European Community, the United States or Japan do, assuming that these countries do move forward and limit their carbon emissions?

The World of Second-Bests: "Carbon Equivalence" Through Lower Costs on Energy-Intensive U.S. Industries, or Higher Costs on Energy-Intensive Imports

Within the second-best world where no international agreement can be reached, two main options are available (options that are, moreover, not mutually exclusive):

- First, the United States could <u>soften</u> the impact of climate change legislation on those <u>U.S. industries</u> particularly exposed to carbon and job leakage (think of cement, steel, aluminum, etc.). The most obvious solution to this end is for the government to allocate free allowances to these industries (be it based on past emissions or so-called grandfathering, or by using some benchmark of carbon-intensity).

- Second, the United States could <u>harden</u> its position against <u>imports</u>, especially imports of carbon-intensive products, and impose a carbon cost on those imports to level the economic playing field and thereby avoid carbon leakage.

[8] Pascal Lamy, Preface, 1 Carbon & Climate Law Review (2008), 1.

> The most obvious solution to this end, within a U.S. cap-and-trade scheme, is to oblige importers to buy emission allowances. Another option could be to enact an energy-performance or energy-intensity standard for certain products (say, a ton of steel cannot have a carbon-footprint of more than x tons of $CO2$) and to impose that standard on both domestic steel and imported steel. A variation thereof is to set a carbon-intensity benchmark with products producing less than the benchmark obtaining carbon credits and products above the benchmark having to buy credits to make-up for their heavy carbon-footprint. Such "tradable performance standards" (TPS) is what the Coalition for Sustainable Cement Manufacturing & Environment has proposed in the context of state-wide California climate change efforts.[9]

In sum, to achieve "carbon equivalence" across countries and thereby avoid or at least limit carbon and job leakage, three options are available: (i) international agreement, (ii) lower the internal, U.S. cost of carbon, or (iii) impose a carbon cost also on imports (be it through import allowances or a performance standard applied to both domestic and imported products). A combination of these three options seems likely, whereby some countries would be recognized as making "equivalent" efforts as compared to those made by the United States (for example, E.C. imports would not have to buy allowances); some U.S. industries get (more) free allowances (and/or for a longer time); and certain imports from other countries, who refuse to (sufficiently) cut their emissions, have to buy a certain (variable) number of allowances corresponding to their climate change efforts and level of development.

What now would the WTO say about any of this? As noted earlier, the WTO would prefer the first option of international agreement and this option is unlikely to raise WTO questions. Cutting costs for certain U.S. industries, however (Option 2), may lead to a WTO challenge based on the argument that such carve-outs or free allowances for, say, U.S. cement or steel amount to an unfair or trade-distorting subsidy in violation of

[9] In the interest of full disclosure, King & Spalding LLP advised the Coalition for Sustainable Cement and Manufacturing & Environment in this context.

the WTO subsidies agreement. Imposing a carbon cost, tariff or allowance requirement on imports, on the other hand (Option 3), risks a WTO challenge based on the argument that such added cost on imports discriminates imports as against domestic products (in violation of the national treatment principle) or discriminates against some countries as against others (in violation of the most-favored-nation clause).

Carve-Outs or Free Allowances For Carbon-Intensive U.S. Industries Can Be Modeled in Compliance with WTO Subsidy Rules

The WTO subsidies agreement only prohibits two, very specific types of subsidies: (i) subsidies that are contingent on exporting the final product, and (ii) subsidies that are contingent on using domestic inputs.[10] Production subsidies, or free allowances that are handed out even if products are not exported or even if foreign inputs are used in the production process, are not prohibited under the WTO treaty. Such production subsidies may only be challenged at the WTO if they can be shown to be particularly trade-distorting, that is, cause "adverse effects" to other WTO Members such as "serious prejudice" to, for example, China or Europe, by impeding or displacing Chinese or European steel or cement on the U.S. or third country markets or "significantly undercutting" the market price of steel or cement.[11]

Would carve-outs or free allowances for energy-intensive U.S. industries constitute such so-called "actionable" or "trade-distorting" subsidies? On this question, four lines of defense are available.

Firstly, it is not even clear that free allowances or lower emission cuts imposed on energy-intensive industries are "subsidies" in the first place. For there to be a subsidy, there must be a "financial contribution" by the U.S. government or income or price support.[12] The argument can be made that although these industries would carry less of a burden than others, the legislation still imposes costs on them (e.g. the opportunity cost of

[10] Article 3 of the Subsidies Agreement.
[11] Articles 5 and 6 of the Subsidies Agreement.
[12] Article 1.1(a) of the Subsidies Agreement.

using rather than selling a free allowance[13]) instead of offering them a "financial contribution". In addition, for there to be a "subsidy" in WTO terms, the industries must be given a "benefit" as compared to what normal market conditions would offer them.[14] Here, the argument can be made that the market point of comparison is not other U.S. industries that are hit harder, but rather similarly situated, carbon-intensive industries that are equally treated or exempted. Thus, even if carbon-intensive U.S. industries could be seen as receiving a "financial contribution" in the form of, for example, free allowances, it arguably does not offer them a "benefit" as compared to normal market situations.

Secondly, for a subsidy to be "actionable" under WTO rules, it must be granted to a "specific" enterprise or industry or group of enterprises or industries.[15] If free allowances or carve-outs are granted not just to one company or industry (say, cement), but to all industries based on the objective criterion of, for example, a high risk of carbon leakage, and this eligibility criterion is "automatic", "clearly spelled out" and "strictly adhered to", the argument can be made that the subsidy is not "specific".[16] And if a subsidy is not "specific", it is not "actionable".

Thirdly, and probably most importantly, other WTO Members would have a hard time demonstrating that free allowances or carve-outs cause them "serious prejudice". On the contrary, as noted earlier, carbon-intensive industries in the United States would carry some extra burden and it would be hard to show how this extra burden harms the bottom line of, for example, Chinese companies. In addition, when it comes to countries that do cut emissions, many of them also hand out free allowances or have special

[13] Moreover, in many cases free allowances operate within a maximum cap which does not allow for growth, thus giving unregulated imports an advantage. In addition, even with 100 per cent free allowances, cement companies, for example, would still be facing higher indirect costs from climate change legislation like higher power rates and higher raw material costs.
[14] Article 1.1(b) of the Subsidies Agreement.
[15] Article 2 of the Subsidies Agreement.
[16] In support, Article 2.1(b) of the Subsidies Agreement: "Where the granting authority, or the legislation pursuant to which the granting authority operates, establishes objective criteria or conditions governing the eligibility for, and the amount of, a subsidy, specificity shall not exist, provided that the eligibility is automatic and that such criteria and conditions are strictly adhered to. The criteria or conditions must be clearly spelled out in law, regulation, or other official document, so as to be capable of verification".

provisions for energy-intensive sectors.[17] In this context, to show that similar carve-outs in U.S. climate change legislation cause "serious prejudice" to E.C. exporters may be difficult.[18]

Fourthly, and finally, although the WTO subsidies agreement itself, as of 2000, no longer offers a safe-haven to certain "green subsidies", the standard *General Agreement on Tariffs and Trade* (GATT) does include an environmental exception (GATT Article XX). Hence, even if none of the above arguments were accepted (i.e., there is a "subsidy", it is "specific", and it does cause "serious prejudice"), a last line of defense for the United States could be to argue that free allowances or other carve-outs are necessary to protect the environment in line with GATT exceptions.[19] At first blush one could claim that carve-outs or free allowances will harm the environment by allowing heavy polluters to continue to pollute. Yet, if free allowances can be sold in the market and are limited to historical emissions or calculated based on a benchmark of normal or average carbon emissions, the affected industries will have an incentive to cut emissions. As a result, even free allowances can contribute to lower carbon emissions and thereby protect the environment. It could also be argued that without such carve-outs or free allowances, the United States would not have adopted any climate change legislation at all (which would surely be much worse for the environment). In addition, carve-outs and free allowances are instruments to limit carbon leakage. Without such instruments (i.e. with full carbon costs on U.S. cement or steel) overall, world-wide emissions could actually have increased by means of U.S. production shifting overseas and producing cement or steel in, for example, China with higher levels of carbon than those emitted previously in

[17] The current E.U. emissions trading scheme permitted for free allocation of up to 95 per cent of allowances for the 2005-2007 period and 90 per cent for the 2008-2012 period. Switzerland's scheme, which started in 2008, opted for 100 per cent free allocation.
[18] Looking beyond 2012, the European Commission has proposed to make auctioning of allowances the principal mode of allocation for, for example, the power sector. Other sectors would be divided in two, distinct categories: (i) those identified as not "exposed to the risk of carbon leakage" which would continue to receive some free allowances until 2020, and (ii) "[e]nergy-intensive industries which are determined to be exposed to significant risk of carbon leakage" which could receive a higher amount of free allocation or for which an "effective carbon equalization system" could be imposed "with a view to putting EU and non-EU producers on a comparable footing" (paragraph 13, Draft Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC, Brussels, January 2008).
[19] Whether GATT exceptions apply also to rules under the Subsidies Agreement remains an open question and has not yet been tested in WTO jurisprudence.

the United States, not only emitted during production in China (both directly in the production process and indirectly, for example, through unregulated electrical generation), but also with the additional negative impact of emissions associated with transporting these goods long distances to the United States.

In sum, if carefully calibrated along the lines suggested above, carve-outs or free allowances for carbon-intensive U.S. industries can be modeled in compliance with WTO subsidy rules. More difficult, and arguably more important, than achieving compliance with WTO rules will be to design a system of free allowances that provides the right incentives to energy-intensive industries (based on solid empirical, sector-specific studies and predictions; not the strength of their lobbying efforts), contributes to stopping climate change and limits carbon and job leakage, all of this without offering loopholes to avoid making any contribution at all, or making the system so complicated that commitments are ultimately circumvented or simply not contributing to lowering carbon emissions.

Carbon Equalization Measures At the Border On Imports Can Be Modeled In Compliance With WTO Non-Discrimination Rules

WTO rules prohibit two types of discrimination on the ground that efficient trade and buying decisions should be based on price, quality and other market factors, not national origin: first, WTO rules prohibit discrimination of imports as compared to like domestic products (national treatment under GATT Article III); second, WTO rules prohibit discrimination of imports from one country as compared to like imports from another WTO Member (most-favored-nation under GATT Article I).

In essence, this means that if a U.S. "carbon equalization measure" at the border – be it a border duty, allowance requirement or performance standard[20] -- does not impose

[20] Performance or carbon-intensity standards on a product-specific basis may also trigger U.S. obligations under the WTO's Agreement on Technical Barriers to Trade (TBT). Yet, like GATT rules, these TBT obligations center on non-discrimination and the goal that technical regulations or standards should not be more trade-restrictive than necessary to achieve a legitimate objective, in this case, combating climate change. Note in this respect that a carbon-intensity standard would not ban imports based on their national origin but on their carbon-footprint and that under a so-called "tradable performance standard", all imports

a heavier burden on, for example, imported cement as opposed to U.S. cement, nor a heavier burden on, for example, Chinese cement as opposed to Indian or European cement, the "carbon equalization measures" will pass WTO muster.

What is more, even if some discrimination were found (with, for example, Chinese cement having to buy import allowances, but not European cement), or any other WTO rule were found to be violated (such as the U.S. obligation not to impose import duties above a certain ceiling), the WTO explicitly provides for environmental exceptions. These environmental exceptions permit some discrimination and other types of tariff or import restrictions for as long as they are "related to" the conservation of exhaustible natural resources (including clean air and the earth's atmosphere) or are "necessary" to protect "human, animal or plant life or health".

Exporting countries are likely to argue that the United States ought not to interfere with their sovereign decision of how, for example, China wants to protect its environment or to regulate production processes and carbon emissions on Chinese territory. Yet, since carbon emissions do not respect state borders and carbon emitted in China can affect the U.S. environment as much as carbon emitted in the United States, this territorial argument based on sovereignty and the principle of non-intervention is not likely to carry much weight. Climate change is a global problem that affects all countries. Solving this problem cannot be done by one country limiting simply its own emissions. If other countries do not want to cooperate by means of an international agreement to cut emissions (Option 1 above), and the risk of climate change is real, countries who do want to fight it have a right under WTO rules to also condition <u>imports</u> based on their carbon footprint and to do so on a unilateral basis, without the agreement of exporting countries. The WTO Appellate Body, the highest judicial organ of the WTO, said as much in the *US – Shrimp/Turtle* dispute (where the WTO eventually accepted a unilateral U.S. ban on shrimp imports on the ground that foreign shrimp were caught in, for example, India or

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would be allowed (those not meeting the standard could simply buy additional credits or allowances to make up for the deficit).

Malaysia, in ways that do not protect endangered sea turtle at the same level as prescribed for U.S. fisherman):

> It appears to us … that conditioning access to a Member's domestic market on whether exporting Members comply with, or adopt, a policy or policies unilaterally prescribed by the importing Member may, to some degree, be a common aspect of measures falling within the scope of one or another of the [GATT] exceptions … [these exceptions] comprise measures that are recognized as *exceptions to substantive obligations* established in the GATT 1994, because the domestic policies embodied in such measures have been recognized as important and legitimate in character.

That said, to meet the GATT environmental exception, U.S. carbon equalization measures cannot be applied in a manner that would constitute "arbitrary or unjustifiable discrimination <u>between countries where the same conditions prevail</u>", nor constitute a "disguised restriction on international trade". This language does, however, allow the United States to make distinctions between imports from different countries (say, Burkina Faso as opposed to China or Europe as opposed to India) for as long as "different conditions" prevail in those countries. Most climate change bills before the 110th Congress, for example, stipulated that imports from least-developed countries would be excused as would imports from countries that take "comparable action" as compared to U.S. action to limit emissions. Since these countries are not in the "same situation", i.e., different "conditions prevail", differentiating between their imports would be acceptable for as long as the differential treatment is based on objective factors related to these countries' "situation", and not to the national origin of the products concerned.

To comply with the above guidelines of non-discrimination and/or the WTO's environmental exception, the devil will be in the details. Here are some elements that will play a role:

- Efforts must be made to ensure that imports pay the same price per ton of carbon as domestic, U.S. produced goods. Where allowances are openly traded, and a separate pool exists for import allowances, a system must be developed so that the price of import allowances carefully tracks the price of domestic allowances.

- Besides pricing allowances in a non-discriminatory way, the calculation of the number of allowances to be submitted for each imported product must also be objective and non-discriminatory. For example, where U.S. products benefited from free allowances so must imported products. In addition, WTO rules prefer a carbon assessment on a product-specific basis by, for example, allowing an importer to demonstrate the actual carbon-footprint of a specific batch of imports. In the absence of such product-specific information, the United States could use an industry-wide historical baseline for each country, compare that baseline to most recent emissions, and divide the excess by the number of units produced in the country in question. The disadvantage of such industry-wide calculation, as compared to a product-specific calculation, is that it may not offer an incentive to, for example, an individual Chinese steel producer to cut emissions since the number of allowances he will have to buy at the U.S. border will anyhow be determined by overall emissions in the Chinese steel sector as a whole. The advantage of an industry-wide calculation, on the other hand, is that it does put more pressure on the Chinese government to enact regulations that mandate emission cuts on an industry or even country-wide basis since only if overall emissions go down (or China takes climate change action "comparable" to that of the United States) will Chinese exports have to pay for less, or no, emission allowances.

- To underscore the environmental objectives of carbon equalization measures at the border, and to avoid discrimination between products or countries, it is crucial that any differential treatment between products (say, computers and cement; raw materials and finished products) or between countries (say, countries with high, low and no climate change action in place, or different levels of development or carbon emissions) are objectively justified with reference to environmental criteria including the risk of carbon leakage. Arguments or indications of economic competitiveness concerns or leveling of the economic playing field between, say, U.S. and Chinese steel, will not carry much weight in the WTO; on the contrary, they would most likely be used in support of a finding that U.S. legislation is protectionist or discriminatory and, therefore, violates the WTO treaty.

- Another consideration when deciding on whether carbon equalization measures on imports are protectionist of U.S. industries (generally not permitted under the WTO) or protectionist of the global environment (generally permitted under the WTO) is what the U.S. authorities would do with the moneys collected when selling or auctioning carbon allowances for imports. If this money goes into environmental projects, preferably global ones, and importers are, moreover, able to present foreign, equivalent allowances or credits (receipts for which would not even go to the U.S. treasury), this would be evidence of a genuine environmental objective. If, in contrast, the receipts would be refunded to specific U.S. import-competing industries (to be distinguished from refunds to U.S. taxpayers in general), this could present evidence of a protectionist or discriminatory design.

In sum, if carefully calibrated along the lines suggested above, carbon equalization measures at the border, imposed on certain imports, can be modeled in compliance with WTO non-discrimination rules and/or the WTO's environmental exception. It must be clear, however, that such climate change measures on imports can be levied only to impose a carbon cost on imports equivalent to the carbon cost imposed on like domestic products. Such measures cannot be used or abused as a tool to bring overall import prices up to the level of U.S. prices. To the extent imports of, for example, steel or cement from China are undercutting U.S. producers for reasons unrelated to U.S. carbon costs, carbon equalization measures cannot remedy that situation. To do so, the

WTO does provide, however, for other tools, namely anti-dumping duties to offset the price-undercutting effect of dumped imports, countervailing duties to offset the injury caused to U.S. industries by foreign subsidies, or safeguard measures to limit all imports because of a sudden surge in imports that causes serious injury to U.S. industries.

To illustrate this point with an example, if the price of U.S. cement is \$10 and because of U.S. climate change legislation it rises to \$14, and the price of Chinese cement (not subject to emission cuts) is \$8, then carbon equalization, assuming both emit the same amount of carbon, implies, at a maximum, an extra charge on Chinese cement of \$4 so as to offset the carbon cost on U.S. producers, not an extra charge of \$6 so as to equalize overall prices.

Finally, additional charges or allowance requirements on imports do have three drawbacks that free allowances for U.S. industries may not have. First, additional costs on, for example, imported steel from China or Korea will make producing cars in the United States more expensive. Trade barriers on energy-intensive inputs make production in the United States more expensive. Second, measures restricting imports based on their carbon-footprint may be seen by some countries as an incentive to ratify a post-Kyoto deal and to cut their emissions at source. Yet, other countries may see it in less benign terms and interpret it as something that will make international agreement more difficult. The latter may not only provoke blockage in climate change negotiations and WTO complaints. It may also trigger similar import restrictions in other countries, including on U.S. exports into countries that do not regard U.S. action against climate change as "comparable" to theirs. That said, the risk of an escalating trade war should not be overstated. If, for example, China wants to retaliate against U.S. import restrictions on the ground that those restrictions violate WTO rules, China must first file and win a WTO complaint and subsequently receive WTO authorization to retaliate.[21] Whenever a country were to retaliate against the United States on the ground of an alleged U.S. violation of WTO rules without such WTO authorization, the United States can challenge such retaliation as inconsistent with the WTO treaty.

[21] Article 23 of the WTO Dispute Settlement Understanding.

A third drawback of carbon equalization measures on imports, as opposed to lowering carbon costs on U.S. energy-intensive industries, is that such border measures rely on accurately detecting and influencing activity abroad, outside the jurisdictional control of U.S. authorities, and depend on information provided by foreign countries and foreign producers. Accurately gauging carbon emissions within the United States is difficult enough; calculating the carbon-footprint of foreign operations is even more difficult (albeit not impossible, witness standard U.S. anti-dumping investigations where U.S. authorities similarly rely on information provided by foreign entities). In addition, where U.S. legislation imposes an allowance requirement on some primary products (such as steel) but not on downstream products (such as cars), the extra duty could be avoided by relocating car plants away from the United States, a move that would only exacerbate job leakage.[22] Finally, where U.S. border measures make fine-line distinctions between the number of allowances to be bought by imports depending on their national origin (say, Chinese cement must buy 10 allowances per ton; cement from Korea only 8), producers may find ways to circumvent the higher burden and get their product into the United States not as "made in China" but as "made in Korea". This would neither protect the environment nor protect American jobs.

In closing one possible advantage of import equalization measures over carve-outs or free allowances for certain U.S. industries must be pointed out. Pricing carbon as it is emitted both by, for example, U.S. steel producers and imports of steel from China, does put a cost on carbon even in respect of energy-intensive products. In contrast, carving-out certain U.S. industries or giving them free allowances lowers the cost of carbon for those industries and does not impose any cost on imports. If effective, overall emission cuts under an import equalization scheme could, therefore, be expected to be greater than under a system of free allowances for certain U.S. industries (unless, of course, the absence of cuts in U.S. energy-intensive industries is more than made up with bigger cuts elsewhere). In this respect, a carbon intensity standard that all suppliers,

[22] Note that this risk is, however, not present when it comes to imports of cement: Downstream products using cement – such as buildings -- are not normally traded.

domestic and foreign, must meet (with flexibility to buy/receive allowances for the difference from the standard) might be an attractive alternative.

Even If the United States Were To Violate WTO Rules, The WTO Dispute Settlement System Offers Broad Flexibility

From the analysis above, it should be clear that even if I am convinced that a WTO consistent way of addressing climate change and carbon and job leakage can be designed, WTO law and jurisprudence is still in its infancy and no one can tell with full certainty that something will, indeed, pass WTO muster. Especially if the United States were to impose carbon equalization measures at the border, on imports, a WTO challenge would be very likely. The United States would have very good arguments to defend such measures. Yet, even if the measures were not well designed or otherwise found to be inconsistent with WTO rules, the legal consequences are rather limited.

First, a WTO proceeding is likely to take two years, if not more, and even if the United States were to lose, it would not have to pay any compensation for past harm. WTO remedies are purely prospective.[23] Second, the United States would get a second chance to amend the details of its legislation to avoid, for example, discrimination. It would be given a "reasonable period of time" to do so, and would not have to pay or compensate for anything during this interval.[24] Third, even if carve-outs or free allowances for energy-intensive U.S. industries were found to violate WTO subsidy rules, the United States would not be obliged to "withdraw" those subsidies, but only to stop or "remove" their "adverse effects".[25] Fourth, whatever WTO violation could be found, the United States can, in practice, decide to maintain its legislation and instead pay trade compensation or accept similar trade restrictions imposed by other, complaining WTO members.[26] In the long-standing *Hormone-treated beef* dispute, for example, the WTO repeatedly condemned the E.C. for unjustifiably banning hormone-treated U.S. beef.

[23] Article 19 of the WTO Dispute Settlement Understanding.
[24] Article 21.3 of the WTO Dispute Settlement Understanding.
[25] Article 7.8 of the Subsidies Agreement.
[26] Article 22 of the WTO Dispute Settlement Understanding.

Yet, the E.C. got away with this "illegal" ban, first, by suffering U.S. retaliatory import restrictions for years, and second, by offering the United States more market access elsewhere in a move that recently ended the dispute (the United States now has a bigger quota to export hormone-free beef into the EC). The United States did something similar after a WTO condemnation of a U.S. ban on online gambling services from Antigua: Instead of lifting the U.S. ban on online gambling, the United States negotiated to keep the ban in place in return for opening its market elsewhere. This is not to say that violating the WTO is costless (there are important reputational costs) or that compensation packages come for free. Only to point out that the WTO does not have the power to force its members to effectively change their legislation. In this sense, the WTO is, especially for large countries like the United States, a welcome check or control mechanism at the edges (to avoid, for example, harmful discrimination or protectionism) without, however, fundamentally affecting U.S. scope of legislative manoeuvring especially when it comes to such a fundamental interest as fighting climate change.

Conclusion

WTO consistent ways are available to fight climate change and to address both carbon and job leakage. If the WTO, in the famous *US – Shrimp/Turtle* dispute, gave the go ahead for the United States to "equalize", in respect of imports, regulations on U.S. shrimp fishing aimed at protecting endangered sea turtle, then surely there must be a WTO-consistent way for the United States to "equalize" the cost of carbon imposed on U.S. energy-intensive industries aimed at saving the planet. That is not to say that these "carbon equalization measures" are easy to design and effectively implement. There is no doubt that reaching an international agreement where all major carbon emitters agree to cut their emissions would be the first-best solution. In addition, or as an alternative, U.S. climate change legislation could impose a lower carbon cost on certain U.S. energy-intensive industries (through, for example, free allowances). As a measure of last resort, U.S. climate change legislation could also impose carbon requirements on certain imports. This should only be a measure of last resort given the additional problems of higher input costs, detecting and influencing activity abroad and possible negative reactions from other countries. Ideally, the threat of such import measures should suffice to guide reluctant countries into a post-Kyoto agreement and back to the first-best solution. If that fails, import measures, as difficult as they may be to design and implement in practical terms, must not be excluded, certainly not on WTO legal grounds, both to protect the environment and to protect American jobs.

Chairman LEVIN. Thank you very much. And the Director General of WTO is in town; so I think our hearing is in that respect very, very timely indeed. Very timely because there is an effort to continue our negotiations, and this issue may well be one that wasn't considered—was it 6 years when I was at Doha? I forget. Long ago.

Mr. Clay.

STATEMENT OF ROBERT E. CLAY, CEO AND CHAIRMAN, BOARD OF DIRECTORS OF PRIDGEON & CLAY, INC

Mr. CLAY. Thank you, Chairman Levin and Ranking Member Brady and other Members of the Subcommittee, for inviting me to testify. My name is Bob Clay, and I am CEO and Chairman of Pridgeon & Clay, Incorporated. We manufacture metal parts and assemblies primarily focused on exhaust and chassis systems for the automotive industry. So this is going to be more of a ground level look at this issue.

My father started Pridgeon & Clay in a converted garage in Grand Rapids, Michigan, when he returned from serving in World War II and built the company over the next four decades before he retired. My brother and I bought the company in 1990. In June of 2008, my company employed 700 people in Grand Rapids and over 150 people in Franklin, Indiana. Due to the current economic climate in the automotive industry, we have laid off a combined total of nearly 400 people. While some will return as our industry recovers, many will not, and it is important that Congress not take actions that would further threaten our remaining jobs.

I believe that addressing environmental concerns is critical to our future, but I am concerned that while the current climate change proposals are well-intentioned, they risk jeopardizing the 60 years of hard work that went into building our company and especially the future of our employees and their families.

Pridgeon & Clay, like many other companies in the automotive industry, depends on our ability to supply our customers internationally. We have thrived because we have followed our customers to other countries and by doing so we have created additional jobs in our U.S. facilities.

Over 8 years ago, we opened a facility in Hungary to supply parts to the European operations of our customers. Last year we formed a joint venture in Mexico, again to follow our customers and serve them in markets where their businesses are growing.

Some of our exports will necessarily move to our plant in Mexico. However, there is a component of our exports that we can continue to competitively manufacture and ship from our U.S. plants, and I fear that a cap-and-trade system will increase our manufacturing and transportation costs to the point that our remaining export business will be endangered.

Our international expansion has never been an effort to produce low-cost products in other countries to be exported back to the U.S. In fact, last year we exported roughly $30 million worth of parts from the U.S. to foreign markets. The reality is that if our U.S. operations in Michigan and Indiana are not globally competitive, then it will be difficult to continue to grow in the U.S.

Pridgeon & Clay is a highly automated, efficient company, but we are also energy intensive. Our primary input is stainless steel, which is an energy-intensive product. Our stamping presses have large electric motors. Many of our parts are welded and some are heat treated. Even a slight increase in energy prices could make us vulnerable to competition from abroad. And the fact that a cap-and-trade system will increase costs for consumers of energy is beyond dispute. If the U.S. is not joined in a cap-and-trade system by the rest of the world, especially low-cost countries like China and India, then more U.S. manufacturing jobs will be lost. That is bad for U.S. consumers, bad for U.S. workers and their families, and bad for the U.S. economy.

Even Energy Secretary Chu recently noted that the concern about cap and trade in today's economic climate is that a lot of money might flow to developing countries in a way that might not be completely politically sellable. Secretary Chu is speaking about a political issue, and I don't care about the political aspects of this issue, but I do care very deeply about the jobs of my employees in Michigan and Indiana, and those jobs are very clearly threatened by the cap and trade unless it is universally applied.

I also want to discuss the proposal to impose a tariff or carbon tax on imported goods from companies that do not have similar climate change policies. That would seem to make sense, but this type of proposal could actually make things worse for companies such as ours because it would increase the cost of raw materials we use to manufacture our products, costs we typically cannot pass along.

Steel accounts for 60 percent of our costs, and even though we purchase virtually all of our steel domestically, placing a tariff on these imports will increase the price of all steel, imported and domestic, and will compound our problems under a cap-and-trade system because we will be paying a higher cost both for energy and our raw materials. This is a formula that will drive manufacturing overseas and limit environmental benefits of a cap-and-trade system because emissions will be relocated rather than reduced.

We are committed to our employees and to helping Congress and our country work through the current economic crisis. However, our ability to continue to manufacture products in the U.S. is imperiled by policies that increase the cost of energy, transportation, and delivery and raw materials.

I ask that you keep in mind the millions of manufacturing jobs lost these past several years and the millions more at stake.

Once again, thank you for inviting me to testify and for considering my input on these complex and important matters.

[The statement of Mr. Clay follows:]

Statement of Robert E. Clay, CEO and Chairman, Board of Directors of Pridgeon & Clay, Inc

I would like to thank Chairman Levin, Ranking Member Brady, and the other Members of the Subcommittee for inviting me to testify today. My name is Bob Clay, and I am President and CEO of Pridgeon & Clay, a middle market independent supplier of metal parts and assemblies, primarily focused on exhaust systems and catalytic converters for the automotive and light truck industry. I am here because as the costs of manufacturing in America continue to increase, my company and employees become less globally competitive. I am concerned that certain proposals to address the important issue of climate change will increase our costs and reduce our ability to compete internationally in an increasingly difficult economic climate.

My connection to Pridgeon & Clay is more than economic. My father started the company in a converted garage in Grand Rapids, Michigan in 1948 and built the company over the next four decades, before he retired. In June of 2008 my company employed over 700 people in Grand Rapids and over 150 in Franklin, Indiana. Due to the current economic climate in the automotive industry we have laid off a combined total of nearly 400 people. While some will return as our industry recovers, many may not, and it is important that Congress not take actions that would further threaten our remaining jobs.

I believe that addressing environmental concerns is critical to our future but would like to clarify that although this hearing is about the trade aspects of climate change, my company views this as a debate not just about climate change, but really about jobs and our global competitiveness. I am concerned that while the current climate change proposals are well intentioned, they risk jeopardizing the 60 years of hard work that went into building our company, and especially the future of our employees in the U.S.

Pridgeon & Clay, like many other companies in the automotive industry, depends upon our ability to supply our customers internationally—and to compete on an international basis—in order to thrive and support our employees. A significant part of our growth has been because we have followed our customers to other countries, and by doing so, we have created additional jobs in our U.S. facilities. Over ten years ago we opened a facility in Hungary to supply parts to the European operations of our customers. Last year, we formed a joint venture in Mexico, again to follow our customers and serve them in foreign markets where their businesses are growing.

Our international expansion has not been an effort to produce low cost products in other countries to be exported back to the U.S. In fact, last year we exported roughly $30 million worth of parts from the U.S. to foreign markets. However, the reality is that if our U.S. operations in Michigan and Indiana are not globally competitive—especially due to high regulatory costs in the U.S. that we do not experience in other countries—then it will be difficult to continue to grow in the U.S.

Pridgeon & Clay is a highly automated, efficient company, but we are also energy intensive, so even a slight increase in operating costs related to energy costs could cause us to lose a contract with a customer. If our costs increase we are vulnerable to competition from abroad.

The climate change policy debate is occurring in the middle of an economic climate that is already pushing U.S. manufacturers to the breaking point. We currently face an array of tough challenges: tight consumer spending, difficulty gaining access to credit, the collapse of car and light truck sales causing problems for automakers and our other customers, and pro-manufacturing policies being developed by other countries around the globe who are actively seeking to increase their own manufacturing base.

The U.S. simply cannot afford to place additional burdens on companies who are doing everything they can to continue to operate in the U.S. unless our trading partners, and especially the low cost manufacturing countries, are prepared do so as well. Many of our largest customers have moved operations to Mexico. To maintain the business and continue to serve those customers, companies like ours have no choice but to follow our customers. There is a component of our exports that we can continue to competitively manufacture and ship from our U.S. plants. However, I fear that implementation of a cap and trade system, and the related tariff that has been proposed on imported goods from countries who have not implemented a similar cap and trade system, will increase our manufacturing and transportation costs to the point that our remaining export business will be vulnerable.

Our first concern about the creation of a cap and trade system for carbon dioxide is based upon the costs associated with such a program, and the impact that those costs will have on our company's ability to compete internationally. The fact that a cap and trade system will increase costs for consumers of energy is beyond dispute. Even if you disregard the indirect costs associated with such a system, the $650 billion estimate for revenues from the sale of allowances under the system are costs that will be passed on to consumers of energy—especially in energy intensive sectors such as manufacturing.

As I mentioned, Pridgeon & Clay is a fairly energy intensive business. Our primary input is stainless steel, which is an energy intensive product. Our stamping presses have large electric motors and pumps, we have large air compressors, many of our parts are welded, some are heat treated and most require cleaning to remove oils and lubricants.

If the U.S. is not joined by the rest of the world—especially by low cost countries—in a cap and trade system, then additional costs in the U.S. will require manufacturers in the U.S. to choose between increasing the costs of their goods, reducing overhead by taking steps such as laying off employees, or finding alternative locations for their manufacturing operations. All of these options are bad for U.S. consumers, bad for U.S. workers, and bad for the U.S. economy.

It is also important for us to discuss the tariff proposal that has been proposed. This would impose a tariff, or "carbon tax," on imported goods from countries that do not have climate change policies similar to the one under consideration in the U.S. This would seem to make sense, but this type of proposal could actually make things worse for companies such as ours, because it would increase the cost of the raw materials we use to manufacture our products—costs we cannot typically pass along. Our company has found that domestic steel output is, at times, too low to satisfy overall demand for steel by U.S. manufacturers, and as a result we sometimes have to import steel from other countries. Placing a tariff on these inputs, which often amount to 60 percent of our costs, will compound our problems under a cap and trade system because we will be paying a higher cost for our energy and a higher cost for our imported raw materials. This is a formula that will further drive manufacturing overseas, limit any environmental benefits of a cap and trade system because emissions will be relocated rather than reduced, and threaten the ability for our company to remain economically viable in the U.S.

Products manufactured in the U.S. must be able to compete against foreign products. If foreign producers are able to avoid the additional costs associated with a cap and trade system, then we will be uncompetitive. This concern has even been echoed by supporters of the cap and trade system, such as the Obama Administration's Secretary of Energy, Dr. Steven Chu, who recently noted that, "The concern about cap-and-trade in today's economic climate—is that a lot of money might flow to developing countries in a way that might not be completely politically sellable." [1] Secretary Chu is speaking about a political issue. I don't care about the political aspects of this issue—but I do care, very deeply, about the jobs of my employees in Michigan and Indiana, and those jobs are very clearly threatened by cap and trade unless it is universally applied throughout the world, especially in low cost countries.

We are committed to our employees and to helping Congress and our country work through the current economic crisis. However, our ability to continue to manufacture products in the U.S. is imperiled by policies that increase the cost of energy, transportation and delivery, and our raw materials. We appreciate the need to address pressing environmental problems, but believe that the cap and trade and tariff options currently being discussed put at risk what remains of the U.S. manufacturing sector. I ask that you keep in mind the millions of manufacturing jobs lost these past several years and the millions more at stake, especially those of us in Michigan Indiana.

Once again, thank you for inviting me to testify and for considering our input on these complex and important matters.

Chairman LEVIN. Thank you very, very much.

So let's go. We have a very, very well-attended hearing and we are all so concerned about this and you can see by the number of us that are here.

Until we got to Mr. Clay, I think there was rather broad agreement, perhaps not on the details but on the need to move and as we move to be sensitive to the impact on American manufacturing and to find a way either through an international agreement or, in the lack of an international agreement, to find a way to handle it domestically.

So, Mr. Clay, I think your concern about manufacturing is very widely shared. I don't think there is any disagreement on that. And I do think what we need to do is to look at your processes and your

[1] John Broder and Matthew Wald, *Big Science Role Is Seen in Global Warming Cure*, N.Y. Times, Feb. 11, 2009. Available at: http://www.nytimes.com/2009/02/12/us/politics/12chu.html?_r=2

product and really see if there isn't a way to both meet the objective of moving on this environmental issue, which you acknowledge; right? I mean some witnesses, a few, have come here and denied there is such a thing as global warming. You don't deny that?

Mr. CLAY. No, I don't.

Chairman LEVIN. Okay. So the question becomes then how do we put together action with a sensitivity to the work that you are doing and your employees. Do you export a lot of what you produce?

Mr. CLAY. It would be about 10 percent of what we produce.

Chairman LEVIN. So the vast majority of what you produce you don't export, you sell here?

Mr. CLAY. Correct.

Chairman LEVIN. So if a system is derived so that all of the inputs that you receive from other places are subject to the same structure, that doesn't then place you at a domestic disadvantage in terms of domestic competition; right? This is in terms of inputs.

Mr. CLAY. Not necessarily.

Chairman LEVIN. If they are all treated the same way for every manufacturer in your position, then you are not at a disadvantage in terms of your competition with other manufacturers who compete in the domestic workplace?

Mr. CLAY. This is true. There is one concern that I have, though, and my concern is not raising our costs as a company but also not raising the overall cost of the system because if the overall cost is increased, then that will serve a function of driving the businesses overseas, people that we supply, bringing the larger assemblies in.

Chairman LEVIN. But in terms of your overseas production, do you export any of that back to the U.S.?

Mr. CLAY. No, we do not.

Chairman LEVIN. You don't.

Mr. CLAY. No.

Chairman LEVIN. So what you are saying is that if there is an increase in cost here, it will make it more difficult for you to compete. If you don't bring most of it back then your competition overseas is under the same rules as yours?

Mr. CLAY. We supply companies that make more complex assemblies. If the overall cost of that assembly increases in the United States, I believe there is a good chance that could move to a different part of the world.

Chairman LEVIN. But the competition there would be under the same rules. If they don't have any particular rules relating to emissions, and we very much want an international agreement, still, the playing field in terms of your overseas operations are more or less the same as everybody else who is competing in that country who is not bringing the product back to the United States.

And I will tell you I do this not to challenge as much as to try to urge that as we talk about this issue that we are really careful about generalizations and about conclusions because there is a deep determination here for us to accomplish both, I think, in this institution. At least most of us. We can't stand still on global warming. We also want to maintain the manufacturing base. So, therefore, as we try to put those two things together, we have to really be careful that we disaggregate and not draw conclusions that really are not correct. And if we look at the dynamics of your operations here and overseas, it seems to me very feasible that you can accomplish both objectives, and including without your moving your operations overseas in order to bring it back here.

I have used up my 5 minutes.

Mr. Brady.

Mr. BRADY. Thank you, Mr. Chairman. Thank you for yielding. I would like to thank the witnesses for appearing here today. I would like to especially thank Mr. Clay, who is the sole witness in pursuit of what we hope to create, which is more American jobs.

I would point out that America is a very open market. We let a lot of countries sell here, but when we try to sell our products around the world we often find it stymied. Free trade agreements have created two-way trade where, for example—where we sell more products and services. For example, in Central America we have turned in that trade agreement a $1 billion deficit into nearly a $7 billion trade surplus in just about 2 years.

I would also point out, I think, the example of Chinese steel is a great example of how complicated this issue is. If you look closely below the surface, America relies on many mills, electric arc furnaces, a lot of recycling. China relies on integrated mills with blasts and basic oxygen furnaces because they don't yet have a scrap steel sector. We have a temporary advantage at best. And those who think we will leverage China, I think, one, China will argue accurately that their per capita carbon dioxide emissions are ⅓ those of the United States, and they—because so little of Chinese steel makes it to America, less than 1 percent of what they produce, and most likely after the economy picks up they will return to being a net importer of steel. Very unlikely that any trade barriers we erect here or cost will leverage China into an international agreement. The point being it will drive up the cost of steel for Mr. Clay and have no impact overseas against competitors.

I would like—because it is a complicated issue, I would like to submit for the record this analysis done by the Brookings Institute that seriously questions whether the border measures Mr. Pauwelyn describes could be compliant with our WTO obligations.

Chairman LEVIN. Without objection.

[The information follows:]

[Not available at the time of printing.]

Mr. BRADY. Maintaining the competitiveness of U.S. exporters like Mr. Clay and others is critical to promoting economic growth. We can't just buy American; we have to sell American.

Last year the EPA estimated how much energy prices could increase under the Lieberman-Warner cap-and-trade bill, a proposal that called for less severe emissions cuts than those outlined in the President's budget. We asked the staff at the U.S. International Trade Commission to model the impact of these very conservative energy price hikes on U.S. exports. This analysis shows that exports of over half a billion dollars would see a decline of U.S. exports of $162 billion. Included in these sectors are automotive stampings and imports, products produced by workers at Mr. Clay's company.

I would like to submit this analysis for the record, Mr. Chairman.

If Congress moves hastily to impose risky new cap-and-trade energy taxes, America stands to lose a stunning $162 billion in export sales. That is a drastic 30-percent loss of American-made products and services. And despite some proponents' claims that few industries would be affected, this analysis, based on data from the EPA, clearly shows that American exporters in these 52 key economic sectors across the spectrum of manufacturing, agriculture, and services would experience severe losses in exports as a result of higher coal, oil, and natural gas prices, another reason Congress should avoid a rush to legislation that could significantly damage the U.S. economy and threaten the jobs of many hardworking Americans.

And I would submit this for the record as well.

Chairman LEVIN. Without objection, it is in the record.

[The information follows:]

[Not available at the time of printing.]

Mr. BRADY. Mr. Clay, let us assume the President's new energy tax should become law. Congress imposes new trade restrictions on raw materials like steel and aluminum and other critical raw materials. You explained this creates a double whammy because you would have to deal with the energy taxes and your input costs would increase. Let us further assume that China does not follow the U.S. lead, does not impose higher energy taxes on its economy, which is likely.

In such a scenario, what would be the impact on the competitiveness of your business and your workers?

Mr. CLAY. It would make our business very vulnerable to shipments from overseas, and it would make our workers vulnerable to losing their jobs.

Mr. BRADY. Well, I think this analysis is key in that it shows that at a time when we have a very fragile economy, considering drastic changes that could cut 30 percent of our export sales around the world would have a real impact on businesses like yours, not just in manufacturing but in ag and services across the spectrum in America. Another reason I think it is wise, Mr. Chairman, to have hearings like this so we can explore all of these issues in-depth.

And I would yield back.

Chairman LEVIN. Thank you. So what we will do now is follow the rule. We will take people as they came in.

Mr. GERARD. Mr. Chairman?

Chairman LEVIN. Yes.

Mr. GERARD. I am very uncomfortable sitting here and listening to this. I wouldn't want this to go much further without clearing up the record.

Chairman LEVIN. Let me suggest this, Mr. Gerard. Let me try to follow the rules, and my guess is somebody will yield to you.

Mr. GERARD. I am not that good at the rules, but I will follow them.

Chairman LEVIN. Okay. [3:11 p.m.]

Chairman LEVIN. So we will go with our usual order. Those who were here at the drop of the gavel will be first. And since there are, I think, nine or ten Democrats and five Republicans, we will follow the rule of two for one. We will not do that when the numbers are basically even.

So now Mr. McDermott is next.

Mr. MCDERMOTT. Mr. Gerard, I will give you 2 minutes to clear the record.

Mr. GERARD. Thank you.

I just want to make sure that Mr. Brady understands that America's steel industry is not a mini mill industry. There are 29 blast furnaces. Currently, only nine are working because of the economic collapse in our sector.

I want you to know that Chinese steel is being dumped into America in record proportions. And, in fact, on one important commodity that you might have some familiarity with, oil country tubular goods, China has put as much steel into our market in the last 6 months as the whole market can withstand.

So I will give it to you as an example. If there are 5 million tons of demand, China has put 5 million tons into our market. Since our economic collapse in November of 2008 to now, China has increased this dumping into our market in almost every commodity. So that it is not that China is being neutral about this; and, in fact, what they have done is try to take over our market.

Mr. BRADY. Who is the largest exporter of steel into America—excuse me. Of Canada?

Mr. MCDERMOTT. I am reclaiming my time.

Mr. GERARD. You are using my time; and in fact I want to make sure that you understand that you are inaccurate in your information. And that if we are going to deal with the issue of climate change, the fact of the matter is that China produces three times the unit of carbon for every ton of steel they produce; and this is called global warming. It is not Chicago warming or Texas warming. It is global warming. And as long as we are making it hospitable for China to dump their steel into our market or as long as we are making it hospitable for China to move their steel around the world, we are making the issue of global warming worse, not better.

And the fact of the matter is that global warming is a real issue. Our union recognized it in 1990; and, in 1990, we said we had to start doing something about it. And we can do that in a way that finds real solutions, not solutions to opening up our market to China so they can keep dumping their unsafe, environmentally fraudulent products into our market. And I resent you pretending that is not what they are doing.

So for our members——

Mr. MCDERMOTT. I reclaim my time.

I want to open up another issue, because, obviously, the question will ultimately be decided, whether or not we do something. People who don't want to do anything because it is going to create a problem are for another day.

I want to hear from—Mr. Pauwelyn, how does the United States go to Copenhagen, having done nothing? Explain to me what our position will be, pro and con? Maybe it is better to go with nothing or maybe it is better to have passed a bill. Or give us our position in the world if we don't deal with this, including the leakage—people say we can go do that under WTO. Tell us what happens at Copenhagen with nothing.

Mr. PAUWELYN. Thank you.

As you may know, in Europe, we have been having the very discussion you are having now for years. And that the issue was——

Mr. MCDERMOTT. We have had a hiatus of 8 years here.

Mr. PAUWELYN. Yeah. So the problem has been, for Europe, what do we do with U.S. exports that have not paid any price for carbon. Of course, now the situation is changing; and the U.S. seems willing to do something.

Now, when it comes to the alternative of going to Copenhagen without anything or having legislation in place, my hope would be that the U.S. would take the lead on this global issue and lead by example. And my ultimate hope would be that whatever border measure is in the bill would eventually not have to be used, would not have to be implemented, and that it would act as a stick, carrot for China, Brazil to come to the table and cut their own emissions.

I strongly hope that this will be the case, that we will never have to use the instrument of trade which is, I admit to Mr. Brady, that it is a harsh instrument, that we will never have to use this. But we could use it as a stick in legislation with the hope that an international deal is made.

Mr. MCDERMOTT. So it is possible that, if we do nothing, that the Europeans might decide to impose a border tax or whatever mechanism you want to call it or what word you want to use it, just say anything coming into Europe pays an additional $5 or $10 for coal?

Mr. PAUWELYN. The European Commission has made it clear that they are also looking into carbon leakage, job leakage; and they will first identify those industries that will get free allowances allocated. And if the problem persists, they will also think about border measures. And, yes, that could be China but also the U.S. if the U.S. does not cut emissions.

Mr. MCDERMOTT. Thank you.

I yield back the balance of my time.

Chairman LEVIN. Mr. Doggett.

Mr. DOGGETT. Thank you, Mr. Chairman.

And thank you for your very constructive comments. They suggest the challenges that we face in constructing a solution, but they don't take the approach of just excuses for inaction.

To those who are concerned about a rush to legislate, as I think the last comments just indicated, we have had 8 years of the United States being the major obstacle to resolving the climate change issue; and I am sure it will take the world a little bit of time to adjust to the notion that we are doing a complete turnabout and are now willing to provide some leadership to deal with this critical problem.

I am very pleased that this hearing is focusing on this issue. I don't believe that the Sierra Club and the Steelworkers have been very frequent visitors, if ever, before this Subcommittee. And if we were to build a new trade policy that recognizes that we must be concerned with the effect of trade on workers and on the environment, it will be through collaboration, not by focusing all of our attention on the leftovers from an outmoded trade policy of the past.

Specifically with reference to climate change and how we move forward, Mr. McMackin, it seemed to me that the industries that you represent, if we get it wrong, they are going to be disadvantaged perhaps more than any other industries in the industry because you do rely on energy significantly in your production. And let me just ask you from that perspective, and I believe your testimony is to this effect, but are you convinced that, as challenging as it may be to work out the details, that there is a way to maintain a level playing field for American industry both for importers and for exporters?

Mr. MCMACKIN. Mr. Doggett, I think that there is. And as an example of the progress we are making in fashioning that, last year when this subcommittee had a hearing, the gap in some of the proposals, that was pointed out where it wouldn't help export markets.

Since then, there are provisions—for instance, I know there is one in Mr. McDermott's bill and I think it is in Mr. Larson's bill—that would aid export markets by providing for export rebates. Your bill which goes at the fundamental problem by having what amounts to one of our output-based rebates or allocation grants would also solve the problem in export markets by removing the extra cost at the source by in effect rebating a lot of that cost to the manufacturers. So, yes, I think we can get there; and we are making good progress.

Mr. DOGGETT. I think this is very helpful testimony to have an international expert on trade laws. Because, among the many excuses, the mythology that those who want to be as inactive in the future as this country has been for the last 8 year, has been the claim that we cannot do anything to assure the competitiveness of our industry without violating the WTO. And you pointed out constructively in your testimony that the same issues have already been considered in Europe.

I think we can learn from the experience of the European countries with cap and trade and on these issues; and in that regard, Mr. Hamilton, I appreciate the fact that you were here in this room with a majority of the Democrats on this Committee last year when we introduced the climate matters bill, 1616, that Mr. McMackin referred to. And is it your belief that we would be better served by seeking a way of addressing these competitiveness issues by focusing on an approach other than just giving away permits to pollute, giving away allowances?

Mr. HAMILTON. Mr. Doggett, as I said in my testimony, I believe that there are ways to kind of combine and structure these alternatives so that there are a couple of different ways you can make it work.

I think I talked about the—what we saw as a drawback of free allocations, which is you don't know what happens to it necessarily. If companies are in fact able to raise prices on the perception that they are now under a regulatory system, then you run the risk of windfall profits. If they are really trade challenged and price constricted, that is much less of a risk. So it really—a lot of these things vary industry to industry and become very tailored. And I think, you know, an output-based rebate is a more tailored instrument to deal with that.

But, you know, again we have been talking about mixing and matching; and then there are different strengths to different mechanisms.

Mr. DOGGETT. You also mentioned in your testimony that you thought the essential solution is a global agreement. But you would agree that to say no action in the United States until others act is just a way of giving a veto power to the most regressive country that refuses to act, someone that would, say, adopt the policy the United States has followed for the last 8 years.

Mr. HAMILTON. You know, I really cut out all that bit about science and all the reasons from the melting of the permafrost and the acidification of the oceans and all the things that the Sierra Club usually talks about. But we are really in a race against time to effectively address climate change.

I think most—both the IPPC and Dr. Hanson and others emphasize the fact that we don't have a long time to wait for the stars to be in complete alignment before we do something. And if we are to actually endeavor to lead on the international stage, you know, we have some ground to make up.

Mr. DOGGETT. As we lead—since my time is running out, as we lead, we want to cooperate. We want to avoid ever having to use the trade tools as you testified. But you believe, do you not, Mr. Hamilton that we need to have as a part of our new cap and trade, cap and invest law provisions that will provide disincentives to countries that do not join us in addressing this problem of carbon pollution?

Mr. HAMILTON. Yes. We believe very clearly that no action to prevent leakage should not be an option.

Chairman LEVIN. Thank you so much, Mr. Doggett.

Mr. Davis, you are next. And the clock did not start. It was totally unintentional when Mr. Doggett—so, Mr. Davis, you will have an extra 45 seconds, or one of you will. You are next.

Mr. DAVIS of Kentucky. Thank you, Mr. Chairman.

Since we are talking about manufacturing, I have one question here. Just raise your hand. How many of you have actually run a manufacturing business who is in this panel today?

Were you a plant manager, Mr. Gerard, or the union——

Mr. GERARD. No, I ran the union; 850,000 members in two countries.

Mr. DAVIS of Kentucky. That wasn't what I asked. I reclaim my time. Thank you. We are going to operate by our rules while we are here.

I do find it somewhat ironic when we deal with a manufacturing trade issue that we only have one manufacturing executive here. I grew up around the steel and the coal industry. I understand it, having watched the plant closing. And I think the obsession with the past 8 years is somewhat misguided intellectually when we are talking about generational impacts that go back to the 1950s. Legitimate environmental questions to ask, legitimate trade questions to ask of how we maintain competitiveness of jobs. And I think the false adversarial nature is a mistake.

Our Ohio Valley has four mills. Of those four mills, every one of them, including bargaining unit members, have told me that these compliance standards will cause them to probably lose their jobs.

You know, as our Democratic floor leader in Kentucky says, what are you going to say to the Caterpillar V–8 operator in a mine who just had his job legislated away in the coal industry? That can't be replaced effectively with anything.

And millions of jobs depend on trade: 42 percent of jobs in our country. Twenty percent of our jobs in Kentucky are dependent on international trade. It is a competitiveness issue with American workers throughout.

And I am concerned about the impact of these energy taxes. This is not an investment. This is a fee. When we talk about an investment, it is where we have the placement actually of money into the private sector and you have got to have that uniform playing field.

One thing that I would question is the border measures to me don't make sense from a simple equilibrium standpoint in commerce. I am just a simple manufacturing guy by background, trained as an engineer and was in the Army before that. My viewing of chemistry and physics is based on an industrial and a practical level. And we are not here, as the chairman said, to talk about global warming and the scientific perceptions of that, which there are certainly many viewpoints.

But, more important, China is the top CO_2 producer in the world, followed by India and Brazil. Per capita is a different ratio. But we only consume 1 percent of their production. It would seem to me on simple metrics—and plenty of economists have seen this—it would be cheaper for them not to comply and pay a tariff for products into the United States knowing that they could stand one on one with that cost.

Mr. McMackin, you have talked about how the Inslee-Doyle provision reduces compliance costs faced by some manufacturers. How significant are the cost increases manufacturers would continue to face even under Inslee-Doyle provisions?

Mr. MCMACKIN. There will be some, Congressman. At this point, Inslee-Doyle, for instance, would not cover cost increases in our nonfuel inputs like soda ash in the glass business.

The other category that is left out is the increase, for instance, in natural gas that would be caused by the increase in the demand for natural gas precisely because it is carbon efficient. Those are two areas where some increment of the cost would not be——

Mr. DAVIS of Kentucky. Just reclaiming my time. So you are saying—but there is going to be a huge impact on the competitiveness of our workers, because we have also passed separate legislation to increase tax on American energy production. Assuming that we try to use some of our resources, it would seem to me that is going to be counterproductive at the end of the day.

Mr. MCMACKIN. Congressman, what I am saying is it hangs in the balance with respect to energy intensive foreign-trade exposed industries. If we continue to work and design a provision that gets us to the point where the costs are minimal of unilateral legislation, then I think we can avoid the job loss.

Mr. DAVIS of Kentucky. Reclaiming my time. Mr. Hamilton in fact in his opening statement said that 80-percent reduction goals would, in fact, have, quote, massive increases in energy costs. I don't see how you can deal with this just from a standpoint of working families, working poor, those on fixed incomes to have what under Warner-Lieberman was estimated a $1,300 per family unit increase in bottom-line energy costs. How we can offset that and remain competitive?

But in your testimony you argued that efforts to minimize the impact of the President's energy taxes should be limited to 5 sectors. Now we have analysis that shows that there is dozens of sectors that would be impacted.

And I have a question for Mr. Clay. Just in closing, do you believe it is appropriate for your firm to be excluded from any assistance in this?

Mr. CLAY. No, I don't think it is appropriate. If there is going to be rebates and assistance for that, then I think we should be included. But we currently are not, to my understanding. I would rather keep the whole situation more simple and not have to deal with this issue and not have to deal with the rebates either.

Mr. DAVIS of Kentucky. Okay. Thank you.

Just reclaiming my time, I think the one thing that Mr. Pauwelyn from Switzerland pointed out, unless everybody plays on this field, looking at the amount of the connectedness of the international supply chain, we are going to have a huge consequence for this. And not many of us in this body have walked the floors of a factory and actually had to deal with manufacturing cost, purchasing cost, the integration of products from across the world. As we continue to explore this, I think it is important that we maintain balance.

There are legitimate questions to be asked, but the thing that I would say in closing is we can't rule out the job impacts on ordinary working people that could be profound in the heartland of the country.

And, secondly, Mr. Brady's comments are absolutely correct on the proportions of the imports of steel in the United States. Canada is first, followed by the EU as major partners. And when we look at these percentages of consumption, let us not create something that we actually can't live with and would legislate more jobs out of the country.

I yield back.

Chairman LEVIN. Mr. Etheridge.

Mr. ETHERIDGE. Thank you, Mr. Chairman; and let me thank each of you for being here.

As someone who was involved in manufacturing, buying materials, all of it was steel, selling it to the finished consumer, I know a little bit about what it means where you buy it, what impact it has.

Mr. Gerard, you represent a group of manufacturers whose management has a great awareness of what this will do, I am sure. And I think it would affect those industries. I would like to know how you think it would, because I represent a State that has a major agribusiness sector, a large manufacturing base, and a growing high-tech manufacturing base. So taking a close look——

Let me give you three of those and let me just ask you, if you would, to give me your thoughts very quickly so I can get to another question on some of these others.

One of those would be right adjacent to my district really, the Tarheel slaughtering plant, the largest pork slaughtering plant in the country, or one of the largest. The other one is one of the largest tire manufacturing plants in Fayettevile, North Carolina. The third one would be a number of pharmaceutical manufacturing facilities, and they are a little different.

I would be interested in your thinking. Because I think, given your background, you would have a good understanding of all three of these industries because you represent people involved in it.

Mr. GERARD. Thank you very much.

Unfortunately, I don't know very much about slaughtering. But let me just say that our union has had a position for quite some time that on this issue we need to have a global arrangement. And that, as I said in my comments, we represent primarily but not unilaterally—or not only—but we represent primarily energy intensive industries and we actually believe that the right way to that path——

Mr. ETHERIDGE. And these three would be.

Mr. GERARD. These three would be.

And the right path in a global arrangement is to have sectoral agreements for those energy intensive industries. Because each one has a different dynamic.

And along the lines of what has already been discussed, we need to have output-based rebates; and those output-based rebates need to be backed up with trade mechanisms so that if people don't live up to the output-based mechanism there is a trade mechanism to fall back on.

And then, finally, if none of that works, you have a border adjustment mechanism; and the border adjustment mechanism, as several have said, is the stick that we use to bring people into compliance.

And what I am extremely concerned about is that I am going to be okay, my kids are probably going to be okay, but my grandkids aren't, and we can't continue to ignore the issue of global climate change. I am very aggressive about saying that it is not Texas-based climate change. It is not North Carolina. It is not Michigan. It is not Pittsburgh or Chicago. It is global-based climate change.

So we need to be the leaders in the global negotiations, and we need to set the framework. And the fundamental of that framework has to be that we don't disadvantage our American manufacturing in favor of those that are already unfairly trading with us.

There is no point in me hashing back and forth with our Republican friends. But I will just remind them that we have got an accumulated trade debt of $6 trillion and we service it every year by spending about $400 billion. I would rather use that on the economy and America. I would rather use that to solve global warming.

Thank you very much.

Mr. ETHERIDGE. Thank you, sir.

Mr. McMackin, I understand that from your approach in your testimony in determining the industries that would receive compensation, whether free admission, allowances or through tax credits or rebates, that identifies a certain universe of industries that are both energy intensive and trade sensitive. What about those trade-sensitive industries that may be less energy intensive? I would be interested in knowing—aren't they susceptible also to imports from unregulated producers and the carbon leakage that comes with that? I would be interested in your comments.

Mr. MCMACKIN. Congressman, yes, they may. So in the proposal——

Mr. ETHERIDGE. How we deal with it.

Mr. MCMACKIN. In the proposal we are developing, we have tried, in addition, to expand the list of industries that would be eligible for the rebate; and we are up now from the 8 or 12 that always get listed to our study identified 45 sub-industries. Then I think we ought to have a provision that says, in addition, any industry should be able on an individual basis to show that it also is subject to leakage. Even if, as you say, it is not quite as energy intensive as others, but it is very trade intensive, then it ought to be eligible for some of this cost mitigation as well.

Mr. ETHERIDGE. Thank you, Mr. Chairman. I yield back.

Chairman LEVIN. Now I think under our procedure Ms. Sánchez is next, and we will see if some of our colleagues who were here before come back. If not, we will go to your side anyway.

Ms. SÁNCHEZ. Mr. Chairman, I believe Mr. Larson was here before I was.

Chairman LEVIN. But he is not on the Subcommittee. And I say that a bit painfully because Mr. Larson is a sponsor of some important legislation.

Ms. SÁNCHEZ. Yes, he is.

Chairman LEVIN. But we have a rule, and we need to follow them. And I am not quite sure how we are going to work that out. So why don't you take your turn.

Ms. SÁNCHEZ. I will, Mr. Chairman.

Chairman LEVIN. Thank you for your consideration.

Ms. SÁNCHEZ. I was trying to help a brother out.

Mr. Clay, in your written testimony, you express some very understandable concerns about the potential pitfalls of imposing a cap-and-trade system to combat global warming in what is admittedly a very challenging economy right now; and you predict that U.S. manufacturers may relocate offshore if the U.S. puts into place a cap-and-trade system. And I was just interested in knowing, your company has operations in Hungary and Poland; is that correct?

Mr. CLAY. That is correct.

Ms. SÁNCHEZ. Are those operations in Hungary and Poland subject to the cap-and-trade system that is imposed by the European Union?

Mr. CLAY. I don't know the answer to that.

Ms. SÁNCHEZ. Okay. I am just curious to know. Because if, in fact, they are subject to the cap-and-trade system that the European Union uses and your argument is that cap and trade will threaten the viability of manufacturing, I am wondering how those operations remain in effect if they are following that system.

Mr. CLAY. We locate in those areas to supply those areas. So it is not an issue—the same issue that we have here. Back in Michigan, we have an issue of competing globally and competing in trying to save our jobs from moving overseas.

Ms. SÁNCHEZ. I understand that. My concern is that there sort of seems to have been created this artificial divide between let us not do anything and let us admit that global warming is a problem but, you know, heaven forbid we should really try to address that with some thoughtful proposals because it may hurt our competitiveness.

And I don't think there is a single Member up here that isn't concerned about job loss and U.S. competitiveness in a global economy. But, by the same token, I don't think we can throw our hands up in the air and say this is too difficult to tackle and therefore it is easier just to do nothing and we will remain more competitive if we don't have to deal with this.

I think globally we need to really look toward being a leader and working with, you know, other countries in terms of bringing the standards up, rather than trying to leave the world without standards or trying to loosen those standards.

Mr. Gerard, I was interested your written testimony because you explain some of the potential benefits and pitfalls of output-based rebates, border adjustments and hybrid schemes; and then you discuss a scenario that would function something similar to a value-added tax. I was wondering if you could explain that proposal a little bit more for us.

Mr. GERARD. Well, the process that we are really looking at from our point of view is trying to develop a series of options so that as we move into the global negotiations that the United States takes a lead and has the kinds of options that I just referred to a minute ago as—for lack of a better word—a ladder of which America will lead on. So that at the bottom of that ladder it would be the kind of border adjustment mechanism that you just referred to that would be like a value-added tax. And I think the professor would agree that that is allowable under the WTO.

Ms. SÁNCHEZ. Professor, do you dispute that assessment?

Mr. PAUWELYN. No, that is correct.

Mr. GERARD. So if you create that kind of a ladder, then what we can do with that is, A, deal with the issue of global warming; B, protect American jobs; and, C, force—if that is the right terminology—other countries to meet the acceptable global standard.

The one thing that I can tell you that I worry about substantially is that an unregulated market in carbon credits will end up creating a bunch of carbon billionaires. We have already seen what unregulated financial markets have done to us. So as we move down this path we think having that ladder of options and America leading the way on that can lead us that way. And if we end up with what would be the equivalent of value-added tax as the stick as well as some carrot, then we believe we can get there and protect American jobs. If we try to ignore those options, then I think we will get left behind. If we just say no, as some want to do, then I think we will be subject to getting penalized by somebody.

Ms. SÁNCHEZ. Final question, which is for all of the panelists; and I would like to see this by a show of hands. Do you believe—any of you believe that the status quo is acceptable going forward?

No takers.

Okay, with that, I yield back the balance of my time.

Chairman LEVIN. I want to be sure what the order is, because I made a mistake and Ms. Sánchez was not here at the drop of the hat. So it is Mr. Reichert, Mr. Herger, Mr. Nunes, Mr. Van Hollen, Mr. Tanner, Mr. Larson, Mr. Kind, Mr. Davis. And if someone who was here at the drop of the gavel comes back, we will change that. Okay. So we all understand.

So, Mr. Reichert, you are next. Thank you.

Mr. REICHERT. Thank you, Mr. Chairman.

I guess I can't help but make a comment or two first about sort of the tone of this hearing. I was a law enforcement officer for 33 years, so I feel like I need to bring some peace to this proceeding.

I am very encouraged by the chairman's comments about a bipartisan effort. We are all wanting to get answers here, and this is really why we are here.

Mr. Gerard, we just have—we are all Americans coming at this very a different place in trying to find common ground where we can make America successful. I come from Washington State, the Evergreen State. But we also are very dependent on trade. One out of every three jobs in Washington State depends on trade. So both of these issues are very, very important to us.

I don't think you will find anyone on this panel that is against protecting, creating, promoting American jobs and protecting our environment, reducing harmful emissions. And I remember back in 1962 when I was just in the 7th grade, my science teacher took us on a little excursion, an affair in the small town of Kent, put us back in the back of a pickup truck wearing gas masks. That was about air pollution back then. She was way ahead of our time.

We have been dealing with this—this didn't just happen in the last 4 years or the last 8 years or the last 10 years. This country and the people in it have been dealing with this issue and trying to figure out what to do for a number of years.

But we have heard a lot about the United States and we know that we must show some leadership in this international climate change debate. So we want to get to the bottom of what we should be doing.

What happens if the United States takes the lead and others don't follow? That is what we are concerned about. All of us here are concerned about that; and I know you are, too. Should there be an economy wide safety valve such that if several years into this program it's clear that China and India are not participating, should we reconsider our program?

Mr. GERARD. If you are putting that to me, I think that, clearly, already China has proven that it is an unreliable trade partner. The commitments that they made through PNTR to get into the WTO are—the ones that they have violated or ignored are too numerous to mention right now. And clearly I think that the ladder of options that I tried to outline earlier should be readily available, including we have given away to China the most valuable thing that we have, and that is access to our market.

And if they are going to play through currency manipulation, through lack of already weak environmental laws, lack of enforcement and other we could go through—we presented a report not very long ago where they got $27 billion of aid for the steel industry in China, aid that is not available to our steel industry, we are told, to compete with. Clearly, if they don't meet those standards, we have an option of terminating that agreement.

So I think that the greater the carrots and the greater the sticks, the greater the chance that America has to bring about the kind of change that is needed in those countries. And I appreciate your comments that you are a protectionist as well and want to protect American jobs. That is important that we recognize that. And I would be the first to say that I believe we can do both, help clean up the environment over time while we protect American jobs.

Mr. REICHERT. And I think that all of us here today believe that we can do both. We just have to figure out a way to protect the environment, protect American jobs at the same time. All of you on the panel have said that, too; and we agree with that.

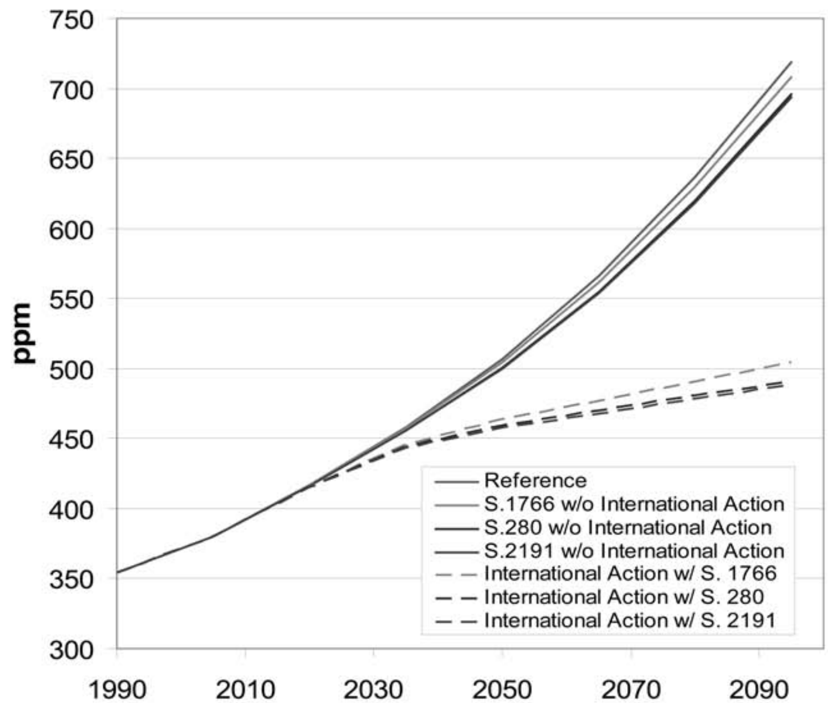
Mr. GERARD. I appreciate your comments.

Mr. REICHERT. We do know that if the United States doesn't, though, get some help and there isn't an international agreement, we won't reduce global greenhouse gases.

So, Mr. Chairman, I would like to enter into the record a chart that has been prepared by the EPA that shows the global emission levels would continue to decline rapidly if the United States imposes emissions and limits but other major emitters like China and India do not.

[The information follows:]

Analysis by EPA of Impact of Unilateral U.S. Action to Reduce Emissions on Global Greenhouse Gas Levels



Source: EPA analysis of S. 2191, available at
http://www.epa.gov/climatechange/economics/economicanalyses.html#s2191

Mr. REICHERT. Mr. McMackin, you have recommended that the allowance rebate program remain in place until there is a successful international agreement. I would like to hear from the witness, does a successful international agreement require that China, India, and all other major emitting countries reduce their emissions? Are there steps we should take to gain their participation? That is the big question, I think.

Mr. MCMACKIN. Congressman, for my part, the way we recommend designing the provision, the cost mitigation would remain in effect until the cost imposed on other countries' energy intensive, foreign trade intensive goods are the same. And to the extent the difference narrows, perhaps the aid would narrow, but it would stay in effect until there is a level playing field.

Mr. PAUWELYN. I think it is realistic to expect, though, that there will be a principle of common but differentiated responsibilities. This is something the U.S. has already agreed to as a party to the U.N. Climate Change Convention, the idea being that developing countries will have to commit less than developed countries. So we have to be realistic at that level. So it is a question of comparable action, not exactly necessarily the same by everyone. But, yes, I would think China, India, Brazil all would have to cut as well.

Mr. REICHERT. Mr. Chairman, thank you.

Chairman LEVIN. Okay. You are next.

Mr. HERGER. Thank you, Mr. Chairman.

Mr. Clay, I was doing a little bit of checking here; and I believe the reason that you weren't able to answer Representative Sánchez's question about the impact, the EU cap-and-trade system on your Hungary and Poland facilities is because you don't face it there. The EU caps don't cap emissions on your sector. And since all the allowances are given away for free, that means there is no climate impact and no competitiveness impact. So the EU is not a good example of what the President is proposing.

Mr. McMackin, you have identified 40 sectors in the economy that you think should qualify for free allowances in cap-and-tax scheme. We have analysis that shows over 50 sectors will experience a decline in exports of at least half a billion dollars each. Many of the companies and workers in these sectors aren't among the 40 you have identified, such as car manufacturers, textile products, farm machinery and specialty crop farmers. What about the workers in these firms? Should Congress ignore the negative impact the President's energy taxes will have on these businesses and their workers?

Mr. MCMACKIN. Mr. Herger, I understand. What our proposal would do is identify those most exposed to leakage, and we would do it by saying they should presumptively qualify for aid by virtue of meeting thresholds of energy intensiveness and foreign competition exposure. But other industries that are also exposed to leakage should have the ability to go in and demonstrate that and should also receive cost mitigation assistance, I believe.

Mr. HERGER. So you would say that would be far more, obviously, than the 40, since they have already identified 50 and most of them are already ones you didn't even identify. So, therefore, there is undoubtedly many other sectors out there that are going to be damaged pretty seriously that you are not even aware of right now.

Mr. MCMACKIN. Congressman, I honestly don't know the answer to that. I know that there is some disagreement in the literature. What we focused on is sort of where the consensus is of the ones that clearly will be exposed to leakage.

Mr. HERGER. Okay. The concern of many of us is that there is so much damage that all of this experimental programs that you are proposing would do, much of which is not done in the EU, as exemplified by Ms. Sánchez's question that she assumed this was being affected by Mr. Clay's companies, and it wasn't. We really don't have a clue of the damage this is going to do to the American workers, to the American economy, and how many people it will put out of work with what we are throwing out here right now.

We hear a lot about the so-called green jobs that are supposed to replace the millions of jobs that would be lost because of the President's proposed energy taxes. However, the union group, Change to Win, recently released a report that shows that many of these, quote, green jobs aren't nearly as good as the manufacturing jobs that would be lost.

The report also states that, quote, green jobs are not automatically good jobs, closed quote.

The report also states that, to make green jobs good jobs, the Government must intervene in the workplace.

Can the witnesses tell me how much intervention, Government intervention is necessary and how much that intervention would cost American taxpayers?

Mr. GERARD. I have never seen the study you are talking about, so I don't know anything about it.

Mr. HERGER. I can certainly make it available to you.

Mr. GERARD. I would love to see it.

Mr. HERGER. But anyone want to answer my question?

Mr. HAMILTON. Well, the point of the study was to say that——

Mr. HERGER. You are familiar with the study?

Mr. HAMILTON. Yeah. In fact, we co-released it with Change to Win. It is basically saying that just because a job is green doesn't mean that it shouldn't have adequate working conditions, adequate wages, and a quality of work that, you know——

Mr. HERGER. That those that it is replacing already have?

Mr. HAMILTON. I think one thing I will say about—I don't actually know which scenario is from EPA that you are using and that Mr. Brady was using. But I believe there are 11 of them. There are a number of scenarios. And as to what the costs will be. But not all of the EPA scenarios depict the kind of manufacturing impact that you are talking about.

Mr. HERGER. Not all of them but many of them?

Mr. HAMILTON. Well, they kind of have a range from, you know, worst case to plausible case. And I think, you know, what we found in our working with the Energy and Commerce Committee and others is that EPA has not done a good job at modeling the positive impacts of energy efficiency improvements on the economy in the context of a carbon control program.

And, you know, the best safety valve, the best cost control measure we can work with is lowering energy demand so that prices are going to come down and all of these impacts are as low as possible.

Mr. NUNES. Thank you, Mr. Chairman.

Mr. Gerard, the Steel Workers Union—obviously, I think they do a lot of work or have historically done a lot of work when it comes to building nuclear reactors, historically. It takes a lot of steel to build a nuclear reactor.

Mr. GERARD. Sure, it takes a lot of steel and cement and everything else, yeah.

Mr. NUNES. So as we look—if the Americans here in the U.S. were to develop a policy that went out to build 200 new nuclear reactors across the country, would that create a lot of jobs for the steelworkers?

Mr. GERARD. I think if we create wind farms and solar farms and we find other ways to do things, we will also create a lot of jobs. We have a lot of members that work in the nuclear industry, and we don't attempt to pick one industry over the other.

Mr. NUNES. Fair enough.

Mr. GERARD. We have—just as a result of attracting a windmill manufacturer to Pennsylvania, we just created close to 600 jobs in two different plate mills that hadn't been working at all. We call those green jobs. So we haven't tried——

Mr. NUNES. Aren't nuclear jobs green jobs?

Mr. GERARD. I am not sure they are green jobs. We have the standards that were just referred to. If they are good, family supporting jobs and pay decent wages and benefits and have great working conditions, they would certainly be considered that way.

Mr. NUNES. So what would take more CO_2 out of the air, building 200 nuclear reactors, building solar panels and windmills or the cap-and-trade scheme that——

Mr. GERARD. I don't know. I am not technically qualified to answer that. I don't know that.

Mr. NUNES. Well, I think it is—I would like for you to look into that at some point and get back to the Committee.

Mr. GERARD. You give me the information you're working from, I'll be glad to

Mr. NUNES. I will be glad to submit you the question of what I asked. Thank you, Mr. Gerard.

Mr. GERARD. You are welcome.

Mr. NUNES. Mr. Hamilton, the Sierra Club supports regulated animal agriculture. And there has been a lot of proposals put out that have been across the board, but looking at dollars per cow, dollars per pig, et cetera, et cetera, are you aware that there is some folks that say that there were more American bison roaming the plains 300 years ago than there are cattle in the United States?

Mr. HAMILTON. I am very sorry. I am the Director of Global Warming and Energy Programs, and I would be happy to——

Mr. NUNES. But you do think that cattle are contributing to global warming?

Mr. HAMILTON. There are manure management—there are both methane and carbon emissions from the ag sector, for sure.

Mr. NUNES. That your group wants to regulate?

Mr. HAMILTON. Yeah. I think the reasons that we are talking about regulating animal agriculture are different than the climate change reasons.

Mr. NUNES. Well, they all—I guess the—I think you know the argument I am making here, which is, you know, I would assume that the Sierra Club thinks it is a bad thing that perhaps as many as 100 million bison were wiped off the plains of the United States. Now it is down to just a few thousand bison.

Mr. HAMILTON. I think so.

Mr. NUNES. You would probably like to see tens of millions roaming the plains again?

Mr. HAMILTON. The question really hasn't come up. I am sorry. I don't—you know, we care about wildlife. We care about pollution. We care about——

Mr. NUNES. If we were to bring back tens of millions of bison, how would we regulate them?

Mr. HAMILTON. I don't know offhand. I am sorry.

Mr. NUNES. You know why I am asking this is because if you look at regulating animal agriculture and at the same time you look at the number of bison that used to roam the plains, you know, to me it is going to be very difficult to regulate animal agriculture. And I would hope that the Sierra Club would look at what is best for the economy, what is best for American agriculture, and what is best for the environment as we move forward.

Mr. HAMILTON. Traditionally, our concerns about agriculture are focused on water pollution and, you know, basically runoff and other things from farms. But I am happy to hook you up with the experts in the Sierra Club that deal with that issue.

Mr. NUNES. I appreciate that.

Thank you, Mr. Chairman.

Chairman LEVIN. Mr. Nunes, you have a deal. You two will get together. Thank you very much.

Mr. Van Hollen.

Mr. VAN HOLLEN. Thank you, Mr. Chairman. I thank all of you gentlemen for your testimony.

I think and hope that this Committee can work together on a bipartisan basis to meet the challenge we face, which is to address the issue of global climate change in a responsible way that does not put our domestic manufacturers at a competitive disadvantage either with respect to their exports, because what we do here will increase the costs of inputs, especially in energy intensive industries and make it harder in the export market and also here in the domestic market with respect to products coming here.

I want to just focus for a minute on the domestic market and products coming into the United States. Assuming that we put in place here something that deals with the—provides rebates for companies so we can deal with the export situation. Let us assume—I think it we all agree that it would be great if we could have an international regime where everyone was playing by the same rules. Then we wouldn't have to worry about figuring out at the border exactly, you know, what inputs were put into a particular export coming into the United States. But let us assume that we don't get there right away, and we need to move ahead and at the same time protect domestic manufacturing. Here is my question.

Let us take China, for example. Let us say China was exporting steel to the United States, and we had a situation where at the border we are trying to compensate for the additional costs that U.S.-manufactured steel is incurring. Would you recommend a system where you sort of figure out the average cost of steel from China or would we be able, based on what you know, to take into account what a particular Chinese manufacturer was doing?

Because, to the extent that you are able to do that, we could obviously send an incentive for the Chinese manufacturer to be reducing their use of carbon-based fuels. And, after all, our objective here, the whole purpose we are talking about here is to try and reduce global warming, right? It is all one big roof.

We are trying to reduce carbon emissions whether from China or the United States. And if we were able to do that on a company basis, you would be able to essentially send an incentive to manufacturers, regardless of where they were in the world, that wanted to export into the U.S. market to use the least-carbon-intensive inputs in their manufacturing.

My question, is that—given what you know about the international trade regime, is that a practical thing to do right now? Or would it require us to put in place a lot more mechanisms to—this is an open question.

Mr. GERARD. I think that it is a very difficult question, if I give you a straight-up answer. But China doesn't know how many steel mills China has. China's steel production in the last 8 years went from production that was equal to the production we had in the United States, roughly at about 120 to 125 million tons, that now they are producing close to 500 million tons. As our capacity has been rationalized downward and imports have forced that downward, China's production has grown. And just this last week it came out that China is now, even after this economic global collapse, has now went back and is almost at the same tons time produced as it was last year at this time.

One of the problems we have is that China doesn't even know where all that raw steel is produced. So there is certainly at this point in time an average—an ability to put an average cost on products. Because there is a range of products.

You take oil country tubular goods as an example. We can do that. But then we would have to dig down deeper to see if those oil country tubular goods are being done with the oldest mills, whether they are made in the newest mills. So even going to the average cost would give us a real step in the right direction. But to say that it would be easy would be disingenuous on my part, it would be hard.

Mr. MCMACKIN. Mr. Van Hollen, can I just up the ante a little bit in thinking about the domestic procedures? Within the provision we have been working on for allocating these free allowances or rebating allowance value, there is an efficiency standard; and it is sector averaged such that there would be a great incentive to try and do better than the average and the ones below would want to catch up and it continually improves as you try to press your advantage or try to catch up. I think it is one of the real advantages of our provision. It creates that same incentive you are talking about for domestic producers.

Mr. GERARD. If I can also add, because he has been sitting here all afternoon, is Representative Larson's bill has a bill that is an economy wide carbon tax bill. And it is simpler. It is easier to enforce. It has fewer WTO complications. And it works similar to a

VAT that I think Ms. Sánchez asked me about. So there are all kinds of options available that we can deal with this.

Mr. PAUWELYN. If I may just add to this, from a trade law perspective, what you are saying is absolutely crucial, to allow individual Chinese manufacturers to show that they have emitted less than the average; and I have not seen this possibility in any of the bills on the table so far.

Mr. VAN HOLLEN. Right. And that would be WTO compliance.

Mr. PAUWELYN. Yes. Because the U.S. lost a case involving gasoline standards just on that issue. It gave individual baselines to U.S. refineries, but it only gave an average baseline to foreign refiners. And the WTO was saying this is discrimination. You have to give them at least the option to submit individual data.

Mr. VAN HOLLEN. To demonstrate that they were——

Mr. PAUWELYN. Right.

Mr. VAN HOLLEN. Thank you very much. I appreciate it.

Thank you all.

Mr. GERARD. That would be useful. Then they would have to come clean with us, too.

Chairman LEVIN. It is useful to have this discussion, and it is getting late.

And as I said, Mr. Lamy is here; and there are negotiations going on in the WTO. So what now exists can always be changed.

All right. I think the two remaining, most-patient people, Mr. Larson, Mr. Davis, I think—I thought so. So I thought Mr. Davis was here right at the beginning. So, Mr. Davis, you are next. And then, Mr. Larson, you will—without respect to seniority or other position, you will wrap this up for us.

Mr. Davis, it is a pleasure; and thank you for your patience.

Mr. DAVIS of Alabama. Thank you, Mr. Chairman, for letting two non-Subcommittee Members make our way to the dance today; and I think my caucus chairman for not exerting either seniority or rank or privilege or any of those wonderful things.

Let me, if I can, pick up on Mr. Doggett's line of questions; and I want to pose this first to you, Mr. Gerard, and then come back to everyone else on the panel.

Mr. Doggett was raising the concern that if the United States failed to act in a unilateral way in terms of enacting some kind of cap-and-trade regime or significant carbon emission standards, carbon tax, what have you, that that would obviously should not be an excuse, the fact that there is no successor to Kyoto, the fact that there is no prospect of an immediate international regime.

Let me maybe test that proposition a little bit. Some have raised the concern, which sounds plausible to me, that if the United States were to enact a unilateral regime that could actually be a disincentive to China, to India, to other developing countries to create a successor to Kyoto. Would you comment on that, Mr. Gerard?

Mr. GERARD. My experience and my instincts would tell me that if we acted unilaterally without the kind of mechanisms we have talked about today that there would be absolutely no reason for places like China or India to do anything. They currently have access to our market, and they currently violate almost every rule there is.

I think the only way that we can have a meaningful global arrangement is with the combination of carrots and sticks. I think we need to negotiate globally. I think we need to have sectoral arrangements that would be done by an energy intensive sector. Then I think we need that ladder of tools I talked about earlier. And I think that way China and India will have to take action.

I am very, very sensitive that one of the most valuable things on Earth is access to this market; and when we give it away for free, we also give away our jobs.

Mr. DAVIS of Alabama. Is there anyone on the panel who has a different point of view on this issue in terms of what the incentive would be for us to signal out to the Chinese and the Indians if the U.S. were to go first and to enact a regime? Does anyone think that would somehow incentivize the Chinese and the Indians to come to the table?

Mr. MCMACKIN. Mr. Davis, if I could just emphasize that it does seem logical to me that if we unilaterally disarm, giving, say, the Chinese a greater cost advantage than they have, they may slow down to enjoy that increased advantage. But, as Mr. Gerard said, if we from the get-go include provisions that deny them that advantage over our trade-exposed industries, we will have denied them the incentive to drag their feet.

Mr. DAVIS of Alabama. Does anyone have a different point of view who is on the panel?

Mr. HAMILTON. I would just add, if you look at the countries that are participating in the Kyoto Agreement in the U.N. Framework Convention, add them to the U.S. and I believe Australia and you have got roughly 80 percent of China's exports. So I think, even if we act, we are not acting alone, because the Framework Convention continues to move forward and that at that point we may need to think about what other measures are necessary to persuade China that it would be a good thing to do.

Mr. DAVIS of Alabama. Go ahead, sir.

Mr. PAUWELYN. I think the crucial thing is one of timing. You are right that China and India would be upset if there is a border measure in the bill you would adopt. But none of the bills on the table now would impose that border measure as of the beginning. It would be phased in after 5 or 10 years even. And that is exactly what Europe is also considering.

Mr. DAVIS of Alabama. Let me slip in another question since my time is about to run out.

I haven't heard—and I apologize if I have just missed them because of other things I have had to do. But I haven't heard a lot of estimates about job loss, even under the proposals, Mr. McMackin, you pointed out. Give me some comparisons, if you will, about potential job loss if we did, as I suppose our colleagues on the other side of the aisle want to do, which was virtually nothing in terms of cap and trade.

I guess you have got three scenarios: doing nothing, status quo, and if we were to have a very aggressive cap-and-trade regime of the kind, frankly, the Democratic Caucus would advocate and if we were to have a cap-and-trade regime that has the kinds of allowances for leakage that you and Mr. Gerard talk about. Can you compare the last two in terms of potential job loss?

Mr. MCMACKIN. Just very quickly, that Mr. Morganstern of Resources for the Future testified last week in Energy and Commerce that he thought the job loss, the leakage could be as much as 40 percent for the most exposed industries over the long term.

I guess the thrust of my group's provision is if we negate or at least substantially mitigate the cost that would cause that job loss, we could essentially save all of that leakage.

Mr. DAVIS of Alabama. Mr. Gerard, do you have any follow-up to that?

Mr. GERARD. The only thing I would add to that is supporting his argument and combining that with the President's position on creating renewable energy sector. We could end up being job positive.

Mr. DAVIS of Alabama. If I can get one final indulgence. Does anyone on the Committee dispute the numbers about 40 percent job losses for the most leveraged industries under leakage?

Mr. PAUWELYN. This is actually what could happen to the cement industry which my firm has been representing. As Chairman Levin was saying, you need to look industry per industry. And the numbers are very different. So it means you have to have a ladder, you have to have a combination, and take this very seriously. There is no silver bullet here.

Chairman LEVIN. All right. I think, Mr. Davis, your questions have been so cogent, it is really important that you were able to be with us and stay.

This is the practice. All the Members of the Committee are going to be welcome, both Republicans and Democrats, for all of these hearings.

So our Caucus Chair, you get the last crack at this; and thank you for finding the time to join us.

Mr. LARSON. Thank you, Mr. Chairman; and I thank the fellow Members on the Subcommittee. This has been an extraordinary panel, and I want to thank them for their participation as well.

It seems to me that the science is pretty clear, and it seems to me that all the panelists acknowledge that we have an environmental problem that we face. And depending upon who you listen to, whether or not we are going to reach a tipping point that will be catastrophic—and that is everyone from scientists to our own military leaders—that is not what this hearing is about.

I am pleased that this hearing is focused on something that I think everyone can agree on. Is there anyone on the panel who doesn't believe that a solution—and my colleague from Alabama I think articulated it very well. We are either going with some form of cap-and-trade system, some form of carbon tax, or we are doing nothing. But in all three cases, you are talking about taxes.

If we do nothing, we are talking about the situation that we are currently in that is volatile, as we have seen just this past year. Where we subject ourselves to once again paying the taxes and seeing the dollars flow overseas to Saudi Arabia, to the OPEC cartel, to re-emergent Russia and even to our neighbor in Canada or Venezuela, we are going to be paying taxes, higher taxes, one way or the other.

Is there anyone on the panel that would disagree that this issue, if we are to combat it forthrightly and level with the American people, that it had doesn't concern taxation?

Thank you.

I think some of my colleagues on the other side, they recognize that this is a tax. But they—you know, that is a terrible word in governing. So nobody likes to say it and—because it carries with it incredible consequences.

So the question becomes, in facing global catastrophe and leveling with the American people, whether or not the Congress of the United States is going to have the temerity to say up front, yes, what we are dealing with is a tax. But here is what we are going to do in terms of making sure from an import/export position in terms of impacted industries like Mr. Clay's but also coal miners throughout this country, steelworkers, that we are going to provide by recognizing that we are going to tax polluters up front and then pass on the savings, pass on those taxes in a revenue-neutral manner to those industries, those individuals, and those communities that are impacted so that we can both combat climate change and global warming but also the need for energy independence by making the kind of investments that both preserve the environment and provide us an opportunity to make sure we are safeguarding our workforce, in fact, enhancing their opportunity to perform.

I think it is a matter of leveling with the American people and getting beyond the nonsense. This is about taxing, and this is going to be about stepping up to the plate. Call it cap and trade, call it a carbon tax, call it—we are going to pretend we are going to do nothing, but we are just going to watch the taxes go up automatically because of what we are going to have to pay in terms of what we are currently paying now to other nations because we don't have a plan that can engage the country in a meaningful and significant way.

Mr. LARSON [continuing]. So I would ask whether or not the panelists feel that a marketplace solution or a direct governmental solution in terms of tax and passing that on is a better way to go.

Mr. GERARD. I have to admit that in the last 6 or 8 months I have become very, very apprehensive of the term "market-based solutions" when we see what has happened in the so-called market.

Let me say that from the point of view of our union and as both citizens and representatives, I think it is very important that we don't damage energy-intensive industries or export-intensive industries as we work our way through this problem. And I actually believe that if we do the costing of carbon right and we take the right steps to make sure it doesn't do damage to our own industries, combined with the President's campaign on renewable energy, I absolutely believe that over the next 5, 8, 10, 12, 20 years we can be job positive, and we need transition programs and we need to make absolutely sure—I will take two industries that we represent the majority of the people in those industries: cement and steel. There currently is no scientific way to make cement or steel without creating carbon because of the process of making it. If we don't protect those industries, we will always need steel and cement, and if we are getting it from China or some other place that doesn't have the same kind of standards we do, we will end up putting more nails in our manufacturing coffin and making ourselves just as reliable or just as reliant, I should say, on those governments as we are now on Middle East oil.

So I think it is a very, very important process that you have engaged in and that the chairman has engaged in and that we are engaged in in finding a way to cost carbon that doesn't create a domestic disadvantage for our producers, yet at the same time marrying that to the Administration's effort to create renewable energy. If we do that, we will be way ahead of the game, and I applaud you for the work you have done.

Mr. PAUWELYN. Just very quickly, I do see a big difference, though. Taxes and death are certain but paying the price for carbon is not a necessity. The whole idea is that if you price carbon people will move away into greener energy, creating green jobs. So you can actually avoid the tax and you can create green jobs without the Government having to spend money, going back to an earlier question. But, yes, it imposes a cost but you can avoid it by shifting, producing less carbon.

Mr. LARSON. Do you seriously believe that the companies that you impose the tax on are not going to pass those on to the consumer?

Mr. PAUWELYN. Again that will depend on industry by industry.

Mr. LARSON. That is what I mean about leveling with the people. They want the truth from their elected representatives about what will happen, notwithstanding that that would ever happen in the marketplace that they would pass a cost along ultimately to the consumer.

Chairman LEVIN. All right. This is so interesting we could go on.

Mr. BRADY. For hours.

Chairman LEVIN. I won't say thank you. It is our job. But we have been here for a number of hours. A most illuminating hearing. There will be more, and thank you to all of you who came here to testify and be here throughout.

We now stand, I will say, adjourned though it is really recessed because we will be back at this subject.

Thank you, Mr. Brady. Thank you.

[Whereupon, at 4:17 p.m., the Subcommittee was adjourned.]

[Submissions for the Record follow:]

Statement of Cargo Airline Association

Mr. Chairman and Members of the Subcommittee: My name is Steve Alterman and I am the president of the Cargo Airline Association ("the Association"), the nationwide voice of the all-cargo air carrier industry.[1] I also have the honor of serving as the current Chairman of the FAA's Environmental Subcommittee of the Agency's Research, Engineering and Development Advisory Committee (REDAC). As a key segment of the air transportation industry, the all-cargo carriers recognize the growing importance of addressing our industry's contribution to global climate change. At the same time, especially in a time of global economic uncertainty, any environmental legislation must take care not to impair our ability to compete in the worldwide marketplace.

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[1] U.S. air carrier members of the Cargo Airline Association are ABX Air, Atlas Air, Capital Cargo, FedEx Express, Kalitta Air and UPS Airlines.

Background

The nation's aviation community plays a pivotal role in maintaining United States leadership in world trade. Indeed, the industry represents approximately 5.6 percent of the U.S. Gross Domestic Product (GDP); contributes over $1.2 trillion annually to the U.S. economy and is responsible for approximately 11 million jobs.[2] In addition to these economic facts, the industry has been in the forefront of addressing environmental issues associated with our operations. To a large extent, of course, the environmental record of the entire aviation community is a result of a search for greater fuel efficiency in an era of generally rising fuel prices. Nevertheless, the environmental benefits of this quest for fuel efficiency cannot be overlooked. For example:

- Emissions from aircraft now account for less than 3 percent of the total U.S. Greenhouse Gas emissions.[3]
- Over the past 40 years, fuel efficiency has improved by over 70 percent[4] and, compared to 2000, in 2007 the U.S. commercial airlines consumed 3 percent **less** fuel while transporting over 20 percent **more** passengers and cargo.

Addressing the Future

While these accomplishments are significant, we recognize that more must be done to meet the environmental challenges of the future. Many of the necessary improvements will come from advances in technology and the implementation of FAA airspace modernization initiatives. This process requires the cooperation of all parties to the aviation environmental debate—industry, Congress and the Administration. Accordingly, an FAA Reauthorization bill in this Congress becomes an environmental imperative. The substantive provisions of all versions of FAA Reauthorization contain significant environmental initiatives that require both authorization and funding—including a joint industry/Government initiative to develop, test and certify alternative aviation fuels that may well be the most promising way of addressing aviation emissions in the future. In addition, FAA Reauthorization will help to advance the move toward the airspace system of the future. This system will permit more direct flight paths, more efficient landing trajectories and better use of movements on the airport surface. In turn, all of these results will save fuel and reduce emissions that contribute to global warming. In the longer term, a new generation of aircraft and aircraft engines being developed by industry and NASA will further help reduce aviation's environmental footprint.

"Cap and Trade" and its Impact on Trade

How does all this activity impact world trade and the ability of the U.S. aviation sector to remain competitive? Simply stated, the entire aviation industry is extremely capital intensive and any move to impose significant additional costs on an industry already suffering in today's economy will reduce the industry's ability to make the investments necessary to service customers around the world. Unfortunately, some of the initiatives now being advanced for dealing with global climate change will have this negative effect. Specifically, elements in both Congress and the Administration have proposed a cap and trade regime that potentially will have a severe dampening effect on aviation's global competitiveness. While details in these proposals may differ slightly, they all appear to impose an "upstream" tax on aviation, with the industry forced to buy carbon credits from fuel producers who will pay the fees directly (or in a secondary market that will undoubtedly emerge). At least for aviation, this method of attempting to deal with global climate change is extremely problematical. Some of the obvious downsides of such a cap and trade system are:

- As noted above, such a system will, in effect, impose a significant additional tax burden on an already heavily taxed industry.
- These taxes will inhibit the ability of the industry to make the capital expenditures necessary to take advantage of a modernized airspace system—a system that will provide significant environmental benefits.

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[2] FAA, *The Economic Impact of Civil Aviation on the U.S. Economy* (October 2008). This report is available at: http://www.faa.gov/about/office_org/headquarters_offices/ato/media/2008_Economic_Impact_Report_web.pdf

[3] This figure includes all segments of U.S. aviation, including commercial aviation, general aviation and the military. See, *Inventory of Greenhouse Emissions and Sinks: 1990–2006*, U.S. Environmental Protection Agency (April 15, 2008).

[4] International Civil Aviation Organization, *Environmental Report 2007*, page 107.

- As we understand the current proposals, they will potentially funnel monies collected to a variety of programs—none of which have any relation to aviation or modernization of the aviation system.
- The bureaucracy necessary to administer any cap and trade program will siphon off a significant portion of any funds collected.
- A cap and trade system is subject to market manipulation.[5]

Potential Alternatives to "Cap and Trade"

Faced with these facts and potential pitfalls, is there another way for aviation to meet its environmental responsibilities, while, at the same time, remaining competitive in the world marketplace? We believe that there is. Rather than being subjected to a cap and trade system, a tailored **revenue-neutral carbon tax** for the commercial airline industry appears to make more sense.[6] Under such a system, the commercial airline industry could be further directly taxed on its use of aviation fuel (the source of pollutants contributing to global climate change),[7] with these levies offset by a corresponding decrease in the existing excise taxes paid by the airlines.[8] Such a scheme would provide a powerful incentive to modernize aircraft fleets, while, at the same time, retain the same overall level of industry taxation.[9] In addition, the funds collected could be used to assist in the effort to convert the nation's air traffic system into one based upon satellite technology rather than the existing reliance on decades-old ground-based radar. And, since such taxes would be collected at the pump, virtually 100 percent of the proceeds could be used on aviation programs that benefit the environment.[10] As noted by the non-partisan Congressional Budget Office (CBO), "A tax on emissions would be the most efficient incentive-based option for reducing emissions and could be relatively easy to implement." [11]

Conclusion

The challenge of addressing global warming, while at the same time remaining competitive in the international marketplace, is perhaps one of the most difficult balancing acts that commercial airlines currently face. On the one hand, we must be able to meet the demands of businesses throughout the world. On the other hand, in planning to meet the requirements of our customers, there must be an environmental overlay on all corporate decision-making. On the Government side, we understand the reasons that legislation is being considered to ensure that global climate change is addressed—and addressed as expeditiously as possible. But that legislation must take care not to cripple an industry that is necessary for economic recovery and that has a long-standing record of environmental sensitivity.

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[5] See, for example, op ed piece by Rep. Peter DeFazio in the January 27, 2009, edition of the *Oregonian*.

[6] **If** a cap and trade system is enacted, however, with respect to aviation it should contain "safety valve" provisions to protect carriers if the price of oil escalates past a predetermined level and funds collected should be transferred to the Aviation Trust Fund for use in system modernization.

[7] Commercial airlines currently pay a fuel tax of 4.3 cents per gallon.

[8] The existing excise tax on air cargo is a 6.25 percent airway bill levy.

[9] We recognize that variations of the carbon tax possibility set forth herein have been suggested by various parties to the global climate change debate. Each of these other proposals should be analyzed for their merits and their impact on U.S. global competitiveness.

[10] Other, ancillary, issues that should be included in the discussion of aviation's place in the global warming debate include (1) the role of the International Civil Aviation Organization (ICAO) and its ongoing attempts to establish international standards for aircraft emissions that r5elate to climate change and (2) the need for any Federal action in this area to preempt any state and local action that would result in a patchwork quilt of regulations on an industry that operates nationwide.

[11] See, *Policy Options for Reducing CO_2 Emissions*, Congressional Budget Office, February 2008.

We recognize that the suggestions made herein are broad overviews and that the details of any final plans to address global climate change will require difficult negotiations among both industry and Government representatives. For our part, we stand ready to engage in this necessary dialogue. If the Subcommittee, or its staff, wants to discuss these issues further, please do not hesitate to contact us.

Thank you very much.

The Cargo Airline Association
The Voice of the Air Cargo Industry

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**Statement of Jennifer Layke,
World Resources Institute Climate and Energy Program**

The World Resources Institute is a non-profit, non-partisan environmental think tank that goes beyond research to provide practical solutions to the world's most urgent environment and development challenges. We work in partnership with scientists, businesses, governments, and non-governmental organizations in more than fifty countries to provide information, tools and analysis to address problems like climate change, the degradation of ecosystems and their capacity to provide for human well-being.

We welcome the opportunity to provide testimony on climate change policy and U.S. competitiveness—as well as to highlight that this as a major opportunity for the United States. In this testimony, we make three points, each of which will be expanded upon below:

- Business as usual is not an attractive option. Warming is happening more rapidly than expected and the impacts are becoming more severe. Sustained economic growth will depend upon an adequate global response to climate change.
- The world has changed dramatically from the days of the Kyoto Protocol. Major developing countries are ready to take significant action on limiting emissions and the Bali Action Plan provides a solid foundation for a new international climate agreement that meets key U.S. interests.
- Although the form and stringency of national actions will differ, U.S. policy design can effectively address the trade concerns of domestic manufacturers.

The implications of a warming planet

In February 2007, the Intergovernmental Panel on Climate Change (IPCC—the official science process sanctioned by the world's governments and participated in by the United States) released its latest report on climate change science. The report states that it is "unequivocal" that Earth's climate is warming, and confirms that the current atmospheric concentration of carbon dioxide and methane, two important greenhouse gases (GHGs), "exceeds by far the natural range over the last 650,000 years." Further, the IPCC concludes that it is now "very likely" (greater than 90 percent probability) that greenhouse gas emissions from human activities have caused "most of the observed increase in globally averaged temperatures since the mid-20th century." [1]

Cheap, plentiful fossil fuels have enabled huge increases in human productivity and great improvements in human well being over the past 200 years. However, this progress has also resulted in significant deforestation and created the buildup of carbon dioxide and other greenhouse gases (GHGs). The impacts of GHG emissions

[1] Pachauri, R.K. and Reisinger, A. (Eds.), *Climate Change 2007: Synthesis Report*, IPCC, Geneva, Switzerland: 2007.

are accelerating, and unless we act very soon, warming will rise to very dangerous levels during our children's lifetimes.

The impacts of warming have become increasingly evident even to non-scientific observers. Sea ice in the Arctic is shrinking, and Greenland's massive ice sheet is melting—far faster than predicted.[2] Glaciers are rapidly shrinking from the Rockies to the Alps. Insect infestations linked to global warming have already had huge economic impacts on the timber industry.[3]

It is clear that much of what we thought we knew a few years ago about the pace of climate change has been superseded. Continuing down this path will result in climate change impacts with significant economic challenges that make continued high-carbon growth patterns more costly than investments in low-carbon technologies. Economic estimates of the costs of inaction total between 5 and 20 percent of global GDP by 2100.[4] In comparison, estimates of the cost of action seem small.[5] The science and the economics tell us we have to act with extraordinary urgency. We must fundamentally re-think our energy infrastructure, address emissions from land use and forestry, and build a global platform to reduce GHG emissions.

However, policymakers must respond to this challenge with the most economically efficient, environmentally effective policy mechanisms. Market-based regulations such as cap and trade will enable businesses to meet environmental goals at the lowest possible cost while guaranteeing the desired environmental outcome. Furthermore, cap and trade policies create incentives for innovation by providing a long-term price signal and a market for new, low-carbon technologies and investments.

Business will respond to a price signal and new markets by creating new business models that will enable them to compete in emerging low carbon markets. Domestic manufacturers will benefit from carbon constraints by creating the most efficient manufacturing facilities, and by serving domestic markets for clean goods and services.

In the past 15 years, major markets and support for clean technologies in Japan and Germany have provided their businesses with needed investment signals. They now lead the world in renewable energy and efficient vehicle technologies. Their companies profit from strong regulatory environments at home and build competitive advantage abroad. In the U.S., loose or uncertain policy structures do not serve companies well, as other countries will build markets for the products and services that will be required in a low-carbon world. Such concerns have led many major companies to call for strong mandatory U.S. climate policy.

An international response?

The importance of a concerted global effort is illustrated by Figure 1. China, the United States and Europe are responsible for 50 percent of the worlds greenhouse gas emissions. And although Chinese emissions surpassed those of the United States in 2008, their per capita emissions remain at barely a quarter of U.S. emissions per person.

Almost 80 percent of current global emissions are produced by fifteen countries (counting the European Union as a single country). Of these, nine are developing economies and two (Russia and Ukraine) are post-communist countries still wrestling with economic transition. Without a viable means of engaging these countries in the effort to cut emissions we cannot avoid catastrophic climate change.

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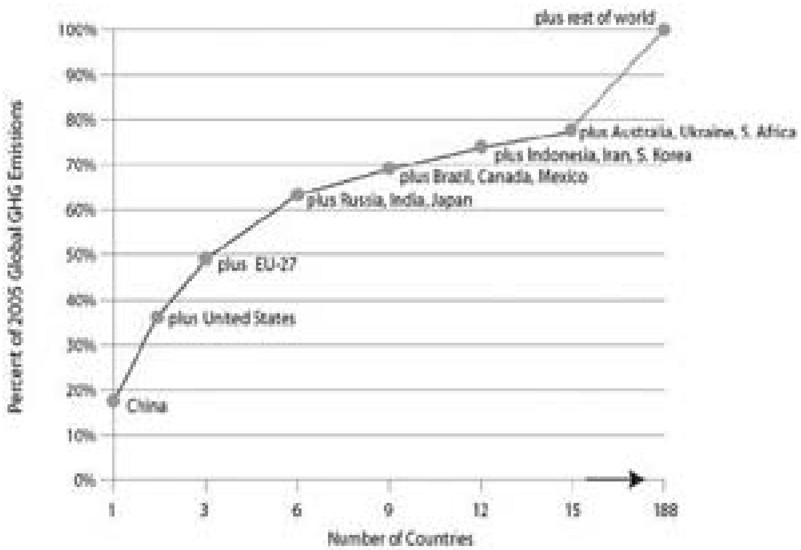
[2] Geophys. Res. Lett.35, L22502; 2008. and NASA "Record Arctic Sea Ice Loss in 2007" http://earthobservatory.nasa.gov/Newsroom/NewImages/Images/arctic_ams_2007259.jpg.

[3] B.C. Ministry of Forests and Range, Forest Analysis and Inventory Branch. 2007. "Timber Supply and the Mountain Pine Beetle Infestation in British Columbia: 2007 Update http://www.for.gov.bc.ca/hfp/mountain_pine_beetle/Pine_Beetle_Update20070917.pdf

[4] William R. Cline, "The Stakes in Limiting Climate Change," Remarks at the Symposium on U.S. Climate Action: A Global Economic Perspective, sponsored by the Center for Global Development, Grantham Research Institute, Peterson Institute for International Economics, and the World Resources Institute, Washington, DC, March 3, 2009, available at www.petersoninstitute.org (accessed on March 9, 2009) or Nicholas Stern, 2007, *The Economics of Climate Change*, Cambridge: Cambridge University Press.

[5] In "The economic crisis and the two great challenges of the 21st century", presented at "Securing our common future: a conference on the future of international development", March 2009, Sir Nicholas Stern estimates that the global cost of stabilization under 500 ppm would be between one and two percent of GDP.

Figure 1: Aggregate GHG emissions by country, 2005

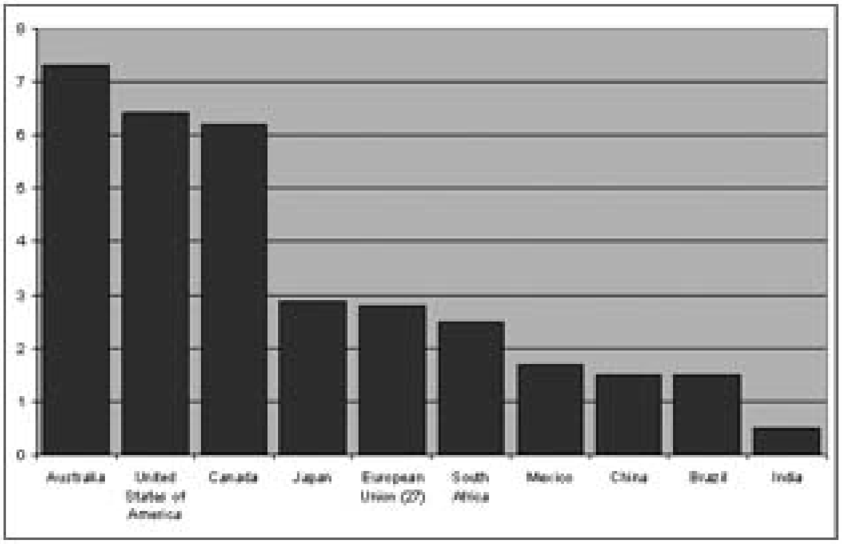


Sources and Notes: WRI, CAIT. Percent contributions are for year 2005 GHG emissions only. Moving from left to right, countries are added in order of their absolute emissions, with the largest being added first. Figures exclude emissions from land-use change and forestry and bunker fuels.Adapted from Figure 2.3 in Baumert et al. (2005).

International climate negotiations begun in 1992 under the United Nations Framework Convention on Climate Change emphasized that countries have common but differentiated responsibilities to mitigate greenhouse gas emissions. In the past, this has meant that their relative obligations may be staggered—dates and reduction levels may vary based on development levels and historic and current contributions to global emissions levels.

For many years, developing countries were clear in their view that they expect a lead from rich countries before they take action on emissions. There are sound reasons for this stance. They are far poorer than developed countries; they have played a far smaller role in creating the climate problem; and their emissions per person generally remain much lower than those of developed countries (see Figure 2). In fact, 1.4 billion people in the development world live on less than $1.25 a day. Some 2.5 billion people rely on fuelwood, charcoal and animal dung to cook. This is over 80 percent of the population of Sub-Saharan Africa and over half of the populations of India and China.

Figure 2: Emissions in tons carbon per person in selected countries (2005, excludes land use)



Since the Bali Action Plan (BAP) of 2007, however, many countries have not only focused the timing of their limits, they have also started to examine the types of "nationally appropriate measures and actions" (NAMAs) they could begin to implement today. With this in mind, major developing countries have now brought forward climate plans. A few interesting examples include:

- ***Brazil*** announced it would reduce its deforestation rate over 50 percent from recent levels by 2017, avoiding an estimated 4.8 billion tons of CO_2 emissions. Deforestation accounts for about two thirds of Brazilian GHG emissions.
- ***China*** set a target of reducing national energy intensity (energy use per unit GDP) by 20 percent in the five years to 2010. It has reduced energy intensity by 1.6 percent in 2006, 3.7 percent in 2007, and 4.3 percent in 2008. China looks likely to be approximately on target to meet its goal. Together, the industrial and building efficiency programs supporting this goal are expected to yield 550 million metric tons CO_2 in GHG savings. Addition savings are expected from measures in the transport sector. China also has ambitious non-fossil plans, including wind, hydro, nuclear and biomass, all of which are expected to save 640 million metric tons CO_2 by 2010.
- ***Mexico*** pledged to halve its greenhouse gas emissions by 2050, employing a "cap-and-trade" policy like the one recently considered by the U.S. Congress.
- ***South Africa*** has presented a detailed plan to peak its national emissions by 2020.

The NAMAs structure offers a significant step forward from the traditional Kyoto Protocol approach. It calls for policies and actions that can be measured, reported and verified. There is now a significant global effort to create robust reporting and verification structures which will help ensure global progress is clear, and that countries can be held accountable for the implementation of their national plans. These common metrics can help build trust, align international commitments with national development goals, and support data collection and dissemination.

Challenges of differentiated action

Although individual nations are working to develop appropriate approaches to mitigation, the policies they adopt will vary in form and stringency. As a result, the costs they impose on manufacturers are unlikely to be uniform. American manufacturers fear that the imbalances created by aggressive climate policy in the U.S.

could contribute significantly to the "offshoring" of jobs and relocation of industry to countries with lower standards and production costs.

Individuals concerned with the environmental integrity of American climate policy have expressed similar concerns. If global supply chains shift manufacturing from countries with explicit emissions caps to countries without such policies, global emissions may not be reduced. This shift in emissions from one location to another is a process commonly referred to as emissions "leakage." While U.S. climate policy would reduce domestic emissions, the net environmental effectiveness of the policy may be undermined if emission sources simply migrate to countries without absolute caps. In order to prevent this, environmentalists have frequently supported the international harmonization of environmental standards and enforcement to minimize the impact of imbalances in compliance costs across nations.

The degree to which these concerns apply to a particular industry depends on three variables:

1) ***Greenhouse gas intensity of production***: The impact of emissions fees and increased costs of energy on a given industry is determined, in part, by how significant these costs would be as a share of total production costs. In industries such as transportation equipment and electronics manufacturing, energy accounts for less than one percent of total production costs. For such industries, transnational imbalances in wages, health care costs and transportation costs dwarf the potential difference in environmental compliance costs stemming from climate policy.[6] For relatively emissions intensive industries like steel, cement and refining, a $10 allowance price would imply a short term price increase of 2 to 4 percent of total costs; nearly 10 times the impact seen by transportation equipment and electronics manufacturers.[7] It is these highly exposed industries where targeted actions may be required. Since detailed GHG accounting has not been conducted for all industries, energy intensity of production can serve as a rough proxy for this variable.

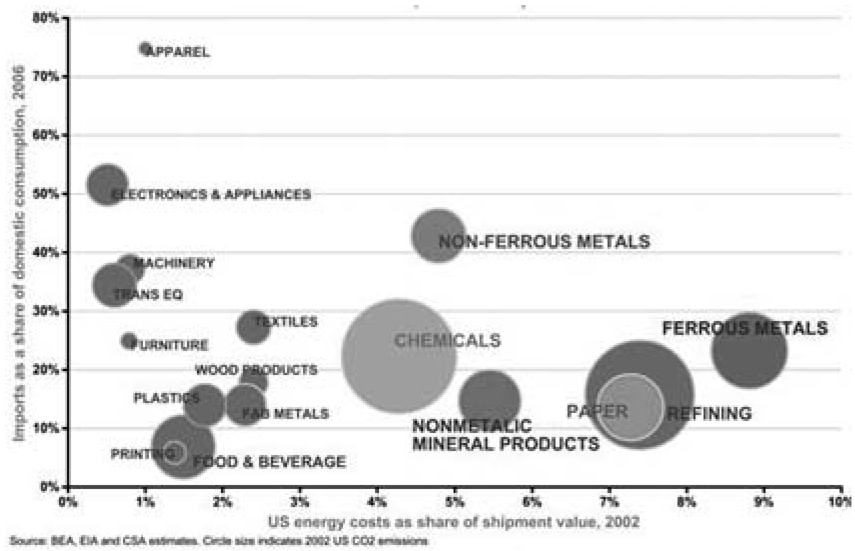
2) ***Potential for efficiency improvements or fuel switching***: The extent to which increased energy prices translate into higher overall production costs depends on each industry's ability to improve GHG efficiency of production through technological improvements or fuel-switching.

3) ***Product demand elasticity***: The demand elasticity of a given product dictates the ability of its manufacturer to change prices while maintaining profitability. As a result, product demand elasticity can indicate the degree to which industry is able to pass through compliance costs not mitigated through efficiency improvements or fuel switching. Although reliable demand elasticity data is difficult to find for all industries, trade intensity can serve as a proxy by indicating the availability of substitutes.

[6] Houser, et. al, *Leveling the Carbon Playing Field, International Competition and U.S. Climate Policy Design*, Peterson Institute for International Economics and World Resources Institute, Washington, DC: 2008.

[7] Ho, Mun, et al. Impact of Carbon Price Policies on U.S. Industry, Resources for the Future, Washington DC, 2008. and EU ETS impacts on profitability and trade: A sector by sector analysis. Carbon Trust, London, 2008.

Figure 3: Industry exposure to climate costs



At the most aggregate level, these metrics indicate that the most exposed products would include paper and pulp, chemicals, nonferrous and ferrous metals and nonmetallic mineral products such as glass and cement (see Figure 3). Petroleum refining, some mining, and certain types of textile manufacturing could also be included in the list. Initial observations in Europe and preliminary modeling of American policies have come to similar conclusions and indicate that, in the absence of mechanisms to address compliance costs, these sectors would face pressure to relocate to nations with less stringent climate policies.[8]

Since these exposed industries are a discrete portion of the economy, targeted policies hold the potential to offset the impact of differentiated national approaches to climate policy. WRI's analysis offers three policy options or scenarios to address U.S. competitiveness concerns:

1) ***Cost containment—***aims to reduce the pressure on carbon intensive industries by limiting the cost of complying with climate legislation. The most direct methods proposed have sought to use allowance allocations to reimburse exposed sectors for both the direct and indirect costs of climate policy.[9] Although such policies could shield industries from newfound competitiveness concerns, they must be carefully structured to maintain incentives for continued production and emissions mitigation as well as avoid overcompensating firms.

2) ***Trade measures*** do not limit costs on the covered companies but seek to indirectly apply similar costs to competing companies in other countries through the treatment of traded goods at the border. Although this policy mechanism found widespread support in legislation during the 110th Congress, it is unclear whether these policies would provide the necessary level of protection for all manufacturers.[10] For example, border price adjustments of imports of primary goods would negatively impact downstream manufacturers such as the automobile industry by increasing costs of raw materials. Furthermore, these policies would do little to protect important export markets, as adjustments would

[8] Ho, Mun, et al. Impact of Carbon Price Policies on U.S. Industry, Resources for the Future, Washington DC, 2008. and EU ETS impacts on profitability and trade: A sector by sector analysis. Carbon Trust, London, 2008.

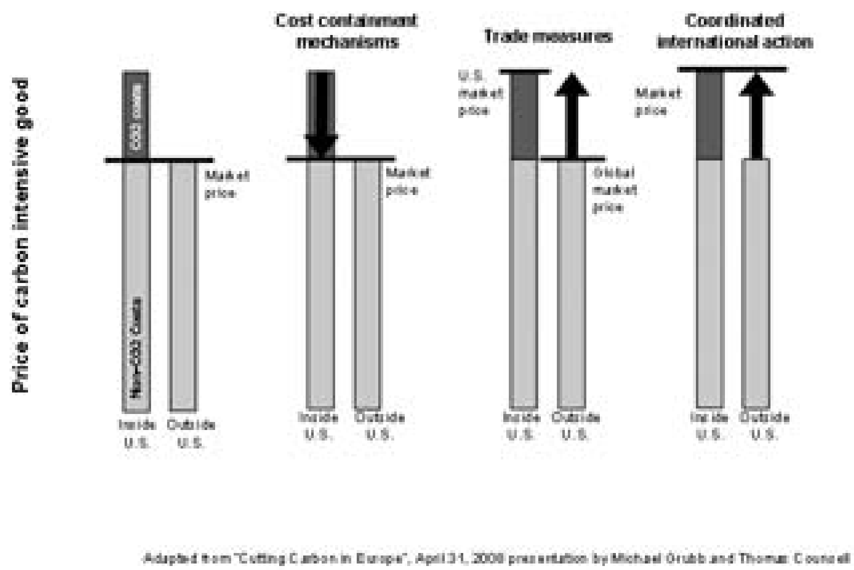
[9] Emission Migration Prevention with Long-term Output Yields Act, H.R. 1759, introduced by Representatives Inslee and Doyle in the 111th session of the United States House of Representatives.

[10] "Lieberman-Warner Climate Security Act", S. 3036, Introduced by Senator Boxer in the 110th session of the United States Senate.

only apply to the U.S. market. Finally, trade measures may damage important international negotiations to create a multilateral agreement to address climate change.[11]

3) ***Coordinated international actions*** seek to reduce the pressure on carbon-intensive industries by encouraging major trading partners to impose similar costs or policies. Commonly cited international mechanisms to address competitiveness and leakage concerns include sectoral agreements and the successful negotiation of a global climate agreement under the UNFCCC that would include mandatory action by developing countries. Although China's official negotiating position in climate debates has focused on ensuring that developed countries make reduction commitments, China's support for the Bali Action Plan, and its National Climate Change platform indicates that the Chinese may be willing to make commitments to regulate specific, heavily polluting industries. Nevertheless, perfect coordination of national actions is unlikely in the immediate future, so the U.S. is likely to consider the first two approaches as China phases in its emissions requirements.[12]

Figure 4: Leveling mechanisms



Careful application of cost containment mechanisms and trade measures should enable the domestic policy process to advance in parallel to international negotiations. This combination of domestic mechanisms and international coordination will allow the U.S. to pursue aggressive mitigation targets while protecting domestic employment and industry.

Statement of Terence P. Stewart and Elizabeth J. Drake

The following comments are submitted in response to the Advisory from the Committee on Ways and Means, dated March 17, 2009, announcing an opportunity for the submission of public comments for the record regarding the trade aspects of cli-

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[11] Forsythe, Michael. "China's Xie Calls U.S. Tariff Threat on Climate 'Protectionism'", Bloomberg, March 18, 2009.

[12] Houser, et. al, *Leveling the Carbon Playing Field, International Competition and U.S. Climate Policy Design*, Peterson Institute for International Economics and World Resources Institute, Washington, DC: 2008.

mate change legislation, including how to minimize carbon leakage and maintain U.S. competitiveness. We attach hereto a paper we have written on criteria for a U.S. climate change initiative that is designed to meet the scientific objectives of reducing greenhouse gas emissions while avoiding excessive economic costs and unnecessary distortions to international trade.

We appreciate the opportunity to provide these comments to the Committee, and thank the Committee for its attention to this vitally important issue.

A Consumption-Based Approach to Combating Climate Change

By Terence P. Stewart and Elizabeth J. Drake [1]

I. Introduction

Recent debate over climate change policy in the U.S. Congress has focused primarily on programs that seek to regulate the production of greenhouse gas (GHG) emissions in the United States. For example, proposals for a cap-and-trade program to address climate change would require U.S. entities to obtain permits for the GHG emissions they produce, and permit such permits to be traded among entities.[2] Consensus on such an approach remains elusive, as stakeholders debate the proper scope and ambition of such a program, the administrative burdens of the program, the costs it would impose and who would bear those costs, the extent to which producers in other countries would bear similar costs and how any cost differentials can be best addressed, the consistency of certain elements of the program with existing international trade obligations and on-going international climate negotiations, and whether the program would deliver the emissions reductions required to reach scientific and environmental objectives.

A number of the limitations and difficulties posed by current cap-and-trade proposals stem from the program's focus on regulating GHG emissions associated with domestic production. Refocusing regulatory efforts on the emissions associated with domestic consumption, instead of production, can avoid many of these pitfalls. This assessment of the advantages and disadvantages of the different approaches is guided by three principles.

1) Maximize Environmental Benefits: Regulating the emissions associated with domestic production captures only a portion of the nation's carbon footprint. In manufacturing, for example, the U.S. is a large net importer, and goods purchased from abroad equal nearly 30 percent of all domestic production.[3] A consumption-based approach would maximize the environmental impact of a climate change program by regulating emissions associated with goods consumed in the U.S., regardless of their origin. A consumption-based approach further maximizes environmental benefits by avoiding the creation of incentives to relocate carbon-intensive production to less-regulated environments. This will help ensure that domestic climate change policies do not distort international trade and that emissions regulations do not inadvertently raise global emissions levels instead of lowering them.

2) Minimize Economic Costs: A production-based approach will impose a variety of costs on domestic entities, some of which may be volatile and unpredictable under a cap-and-trade system. Such costs may be particularly difficult for manufacturers to pass on to their customers in a recessionary environment, especially so if domestic manufacturers bear costs that are not borne by foreign producers. A consumption-based system, by contrast, is designed to increase the price of carbon-intensive goods consumed in the U.S. in a transparent, predictable and uniform manner, regardless of the good's origin. This approach sends the appropriate signals to consumers and creates demand for less carbon-intensive goods, while avoiding imposing disproportionate costs on U.S. producers.

3) Honor International Trade Rules and Principles: A system that seeks to impose costs on production may create WTO concerns, because efforts to impose similar costs on foreign producers (or rebate such costs for domestic producers or for export production) could be challenged as trade barriers or subsidies that would have to be justified under exceptions to WTO rules. In contrast, a system that regu-

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[1] The views expressed in these comments are those of the authors, and do not necessarily reflect the views of any clients of the firm.

[2] *See, e.g.*, Lieberman-Warner Climate Security Act of 2008, S. 2191, 110th Cong.

[3] The U.S. imported $1.491 trillion in manufactured goods in 2008. U.S. Census Bureau, U.S. Bureau of Economic Analysis, U.S. International Trade in Goods and Services: December 2008 (Feb. 11, 2009) at Ex. 15. In 2008, U.S. manufacturers had $5.185 trillion in shipments. U.S. Census Bureau, Full Report on Manufacturers' Shipments, Inventories and Orders: December 2008 (Feb. 5, 2009) at Table 1. Imports were thus equal to 29 percent of domestic production for 2008.

lates domestic consumption treats all domestically-consumed goods equally, no matter where they are produced, based only on their carbon-intensity. While it is possible to fashion WTO-consistent approaches under either approach, there is a higher likelihood of limited or no conflict from a system that is based on consumption with equal treatment for domestic and imported goods alike.

Based on the above principles, some of the advantages of targeting consumption instead of production in a climate change program are reviewed in more detail below, followed by suggestions for some possible elements of a consumption-based program.

II. The Advantages of Regulating Consumption Instead of Production

In assessing various proposals for addressing climate change, it is helpful to understand production-based and consumption-based approaches that have been used to address other environmental problems. Cap-and-trade systems regulating the GHG emissions associated with domestic production are primarily modeled on the acid rain program, which created tradable permits for domestic entities that emitted sulfur dioxide.[4] The primary mechanism for regulating emissions associated with domestic consumption would be a carbon tax or GHG emissions fee. There are several precedents for such a fee, including the excise tax on ozone depleting chemicals (ODCs) and the Superfund tax.[5] These precedents are discussed in more detail below.

While there are potentially many advantages to addressing climate change by regulating consumption of carbon-intensive goods rather than their production, the focus below is on ten key areas in which a consumption-based approach better achieves the core goals of maximizing environmental benefits, minimizing economic costs, and honoring international trade obligations. Finally, while these comments focus primarily on the contrast between a production-based cap-and-trade system and a consumption-based emissions fee system, it is important to recognize that some sectors with sufficiently special circumstances may merit alternative approaches, and a multitude of approaches may be appropriate.

1) Scope: For environmental harms that are localized at the site of emissions, such as the incidence of acid rain near the site of sulfur dioxide emissions, a production-based approach to regulating emissions is likely to achieve the appropriate scope of coverage to produce the desired environmental results.[6] By contrast, for environmental harms that are not so localized and that are instead global in nature, a consumption-based approach with a broader regulatory scope is more appropriate. Such an approach is particularly appropriate for nations that are large consumers of the goods that cause the harmful global impact of concern. For example, the use of ozone-depleting chemicals harmed the global environment regardless of where those chemicals were produced—thus, a consumption-based excise tax in the United States (a key consuming nation) was appropriately broad in scope. It drastically curtailed the use of ozone-depleting chemicals and effectively protected the ozone layer.[7] Similarly, climate change is a global phenomenon—a ton of carbon dioxide emissions will do the exact same harm to the earth's environment regardless of where it is produced. Thus, a consumption-based approach matches the scope of the environmental problem to be addressed by regulating emissions associated with all carbon-intensive goods consumed, no matter where those goods might have been produced.

2) Uniformity: A consumption-based approach has the additional advantage of automatically treating the emissions associated with a good exactly the same no matter where that good may originate from. Thus, the same science-based results

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[4] *See, e.g.*, U.S. Environmental Protection Agency, "Cap and Trade: Acid Rain Program Basics," available on-line at *http://www.epa.gov/airmarkets/cap-trade/docs/arbasics.pdf*.

[5] The ozone-depleting chemicals tax is codified at 26 U.S.C. §§4681–4682. The superfund tax was codified at 26 U.S.C. §4661 *et seq. See, e.g.*, J. Andrew Hoerner, *The Role of Border Tax Adjustments in Environmental Taxation: Theory and U.S. Experience*, Working Paper Presented at the International Workshop on Market Based Instruments and International Trade of the Institute for Environmental Studies, Amsterdam, the Netherlands (Mar. 19, 1998) at 9–12; Elizabeth Cook, ed., Ozone Protection in the United States: Elements of Success, World Resources Institute (Nov. 1996).

[6] For a critique of the applicability of the acid rain model to climate change, see, e.g., Robert J. Shapiro, Addressing the Risks of Climate Change: The Environmental Effectiveness and Economic Efficiency of Emissions Caps and Tradable Permits, Compared to Carbon Taxes (Feb. 2007) at 18–19, available on-line at *http://www.sonecon.com/docs/studies/climate*_021407.pdf; Kenneth P. Green, Steven F. Hayward, and Kevin A. Hassett, "Climate Change: Cap vs. Taxes," Environmental Policy Outlook, No. 2, American Enterprise Institute (June 2007).

[7] Elizabeth Cook, ed., Ozone Protection in the United States: Elements of Success, World Resources Institute (Nov. 1996).

are achieved, and environmental damage is prevented or mitigated to the exact same extent, for all goods subject to the same uniform, consumption-based regulation. A production-based approach, however, necessarily treats goods differently depending on where they are produced. This fails to recognize that, in the case of GHG emissions and climate change, the location of production is irrelevant from a scientific and environmental perspective. Attempts to correct for this differential treatment (by, for example, adding on "competitiveness" mechanisms to a cap-and-trade program) are extremely challenging because they force policy-makers to assess which other production locations should be regulated and how. The variety of complications that arise in trying to design such compensatory mechanisms only underscores how ill-suited an approach that differentiates treatment based on the site of production is to addressing the global problem of climate change.

3) Equal Treatment: With a consumption-based approach, emissions are regulated for all goods consumed domestically, and goods not consumed domestically are not subject to the domestic regulation. For example, the Superfund tax and the ODC excise tax were assessed on the same basis for domestic goods sold in the U.S. and for imported goods sold in the U.S.[8] In addition, the taxes were rebated on exports.[9] Because all goods were taxed upon consumption, no additional mechanisms were needed to ensure equal treatment of domestic and foreign goods—all domestic and foreign goods consumed domestically were taxed equally; all domestic and foreign goods not consumed domestically were equally exempt from the tax. A production-based approach, however, makes it much more difficult to achieve equal treatment. While some compensatory charges may be assessed on imported goods based on their own site of production, ensuring those charges treat domestic and foreign goods equally based on the environmental harm associated with that good's production has proven challenging.[10] Rebating the costs of domestic regulation on exports is also problematic, and not only because of problems with WTO consistency. Because the costs imposed on production provide the only incentive to meet environmental goals under such an approach, eliminating those costs necessarily reduces the desired environmental impact.

4) Coverage: Even if regulation of some upstream products can be roughly equalized under a production-based program, downstream producers are likely to suffer differential treatment based on their location. For example, even if foreign and domestic steel are regulated on a somewhat equivalent basis under a production-based approach, domestic automakers will bear more costs in purchasing that steel than will foreign automakers who can source steel produced under unregulated conditions. Thus, the differential treatment, and the failure to uniformly address environmental impacts, is simply pushed further down the production chain. A consumption-based approach can avoid this unfortunate result by covering all goods that entail harmful emissions. For example, the Superfund tax and ODC excise tax, in addition to taxing upstream products consumed domestically regardless of their origin, also taxed imports of downstream goods that used more than a *de minimis* amount of such upstream goods in their production process.[11] The Superfund tax and ODC excise tax were not only assessed on imports that incorporated regulated chemicals chemicals, but it was also assessed on imports that entailed the use of such chemicals in their production process.[12] The amount of regulated chemicals consumed in the production process was evaluated based on foreign manufacturer certifications or the predominant method of manufacture for the product in question.[13]

5) Efficiency: A consumption-based approach can also be significantly more efficient than production-based approaches. For example, the Congressional Budget Office estimates that a tax on the consumption of carbon could achieve the same GHG emissions reductions as a cap-and-trade program, and that the net economic benefits of the tax could be up to five times greater than the net benefits of a cap.[14] Many economists agree that a carbon tax or emissions tax is significantly more efficient than a cap-and-trade program and would create much less of a drag on economic growth.[15] In part this is due to the advantages of transparency and predict-

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[8] 26 U.S.C. §§ 4661(a) (Superfund); 26 U.S.C. § 4681(a) (ODCs).
[9] 26 U.S.C. §§ 4662(e) (Superfund); 26 U.S.C. § 4682(d)(3)(A) (ODCs).
[10] *See, e.g.*, the international reserve allowance program contained in the Lieberman-Warner Climate Security Act of 2008, S. 2191, 110th Cong. § 6006.
[11] 26 U.S.C. § 4672(a) (Superfund); 26 U.S.C. § 4682(c) (ODCs).
[12] 26 U.S.C. § 4671(b) (Superfund); 26 U.S.C. § 4681(b)(2) (ODCs).
[13] *Id. See also* 26 C.F.R. § 52.4682–3(e) (ODCs).
[14] Congressional Budget Office, *Policy Options for Reducing CO_2* Emissions (Feb. 2008) at ix.
[15] *See, e.g.*, Robert Shapiro, Nam Pham and Arun Malik, *Addressing Climate Change Without Impairing the U.S. Economy: The Economics and Environmental Science of Combining a Carbon-Based Tax and Tax Relief*, The U.S. Climate Taskforce (June 2008); William D. Nordhaus,

ability discussed below. In addition, the United States already has a tried and true system for assessing and collecting taxes, whereas the creation of a cap-and-trade program would require the establishment of a new bureaucracy to oversee the distribution of emissions permits, a new trading market, and new rules and regulators to ensure the adequate functioning of that market.

6 Transparency: The goal of a consumption-based approach is to increase the price of carbon-intensive goods, thus sending a clear signal to consumers and driving up demand for less carbon-intensive goods. Thus, the premium is on transparency. A consumption tax, for example, is set at a known level that clearly relays the same market signals to consumers, producers, and investors alike. The cost of GHG emissions—in terms of the environmental damage such emissions cause—is no longer hidden, but is openly represented in the additional tax levied on goods that produce such emissions. A production-based approach lacks such transparency. Because the focus is on imposing costs on producers, the extent to which such costs may be passed on to consumers is unknown and will likely vary based on the market conditions such producers face and other regulations they may be subject to.[16]

7 Predictability: Closely related to the greater transparency of consumption-based systems is the increased predictability they provide to market participants. For example, when a tax rate is set—either legislatively or administratively—it is public knowledge how much each excess ton of GHG emissions will cost, when that cost will be imposed, and, if the tax increases over time, when and how those costs will rise. Advance knowledge of these costs is extremely valuable in industries such as capital-intensive manufacturing, where firms must plan production schedules and solicit capital from investors to make that production possible. In addition, public certainty regarding the cost of excessive GHG emissions both now and in the future will stimulate entrepreneurs and investors to develop new abatement technologies and new energy sources as quickly as possible.[17] By contrast, a production-based system that lacks a transparent cost structure introduces significant uncertainty that makes it difficult for capital-intensive industries to raise funds and plan production strategies. Such uncertainty also provides little initial incentive to ramp up development of new technologies and alternative fuel sources. The problem is particularly acute with a cap-and-trade system, where the price of excess emissions is set by a trading market open to speculators and financiers. Past experience demonstrates that allowance prices in such markets can be extremely volatile from month to month or even day to day.[18]

8 Flexibility: A consumption-based system provides flexibility in two ways. First, by putting a price on emissions instead of a cap, the system allows producers to make technology improvements when it is most cost-effective to do so, instead of when the declining cap makes it cost-prohibitive not to do so.[19] Second, the level at which a consumption-based tax is set can be adjusted as necessary to ensure that environmental and economic goals are being met and to allow policy-makers to adapt to advancements in scientific and environmental knowledge. In a tax system, such adjustments only require a re-setting of the rate—they do not require a com-

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To Tax or Not to Tax: Alternative Approaches to Slowing Global Warming, 1 Review of Environmental Economics and Policy 26 (2007); Kenneth P. Green, Steven F. Hayward, and Kevin A. Hassett, "Climate Change: Cap vs. Taxes," *Environmental Policy Outlook*, No. 2, American Enterprise Institute (June 2007); Gilbert E. Metcalf, "A Green Employment Tax Swap: Using a Carbon Tax to Finance Payroll Tax Relief," *Tax Reform, Energy and the Environment Policy Brief*, Brookings Institution and World Resources Institute (June 2007); Richard N. Cooper, *The Kyoto Protocol: A Flawed Concept*, in Trade and Environment: Theory and Policy in the Context of EU Enlargement (John Maxwell and Rafael Reuveny, eds., 2005).

[16] For example, observers of the EU's Emissions Trading Scheme have noted that the regulatory environment for utilities enabled them to raise rates while emissions allowances were being allocated at no cost. *See* A. Denny Ellerman and Paul L. Joskow, *The European Union's Emissions Trading System in Perspective*, Pew Center on Global Climate Change (May 2008) at 24–31.

[17] The ODC excise tax was considered to be a very successful means of spurring industry to develop and use alternative chemicals and technologies. *See* Elizabeth Cook, ed., Ozone Protection in the United States: Elements of Success, World Resources Institute (Nov. 1996) at 50.

[18] Allowance prices have been highly volatile in the European Emissions Trading Scheme, the Acid Rain program, and other cap-and-trade initiatives. *See* Gilbert E. Metcalf, *Designing a Carbon Tax to Reduce U.S. Greenhouse Gas Emissions*, NBER Working Paper 14375 (Oct. 2008) at 25–28.

[19] See Congressional Budget Office, Policy Options for Reducing CO_2 Emissions (Feb. 2008) at viii–ix.

plicated re-balancing of trade-offs among sectors and producers.[20] Once stakeholders have signed on to a production-based system, however, and received certain quantities of allowances relative to other actors with similar expectations for the future, adjusting the system to reflect economic developments, advancing scientific knowledge, or new environmental realities could be extremely difficult both as a practical matter and a political one.

9) Development: One of the thorniest issues in designing a production-based system for addressing climate change is how to regulate emissions produced in developing countries. International negotiations under the UN Framework Convention on Climate Change (UNFCCC) are based on the principle of common but differentiated responsibilities for developing countries, in recognition of the fact that such countries will need to achieve significant economic growth to emerge from poverty and that such growth will likely entail rising emissions levels rather than declining ones.[21] Industries in developed countries who face competition from developing country producers are, however, justifiably concerned that such differentiated levels of emissions regulations will put them at a competitive disadvantage, leading to efforts to either mitigate the costs of developed country regulations or impose similar costs on developing country producers. A consumption-based approach avoids this dilemma by regulating goods based on their site of consumption, not their site of production. Thus, developing countries will be free to set their own national emissions reductions targets and design their own programs to meet those targets, consistent with their internationally-agreed rights and obligations. Only the goods such countries produce that are consumed in the U.S. would be subject to further regulation, and those goods would be treated like all other carbon-intensive goods consumed in the U.S. A consumption-based approach thus recognizes the need for wealthy nations to take full responsibility for their higher consumption levels and the emissions associated with that consumption, while providing the policy space for poorer countries to meet domestic emissions targets that reflect their development needs.

10) WTO Consistency: Another important advantage of a consumption-based approach is that it is more likely to be viewed internationally as consistent with international trade rules and principles. For example, GATT and WTO rules have long allowed indirect taxes (such as VAT taxes) to be adjusted at the border. Such taxes may be assessed on imports to the same extent they are charged on domestic goods without violating national treatment or other obligations, and such taxes may be rebated on exports without constituting a prohibited export subsidy.[22] To the extent any refinements to WTO rules or the conclusion of a stand-alone agreement under the auspices of the UNFCCC is needed to provide greater certainty that similar charges can be assessed based on a good's carbon intensity, such adjustments are not likely to be major and would be consistent with long-standing WTO principles. By contrast, attempts to patch "competitiveness" mechanisms on to a production-based system are likely to draw more scrutiny under international trade rules. While there are likely to be WTO-consistent approaches to a cap-and-trade system which is structured to minimize "leakage," many have written that such approaches could be challenged as disguised barriers to trade and/or export subsidies.[23] Absent modification to the WTO rules to specifically authorize the types of leakage prevention approaches being considered, the disadvantage of a cap-and-trade system with leakage mechanisms is the uncertainty that will surround U.S. policy until a final WTO decision is rendered and the U.S. considers how to respond if the decision is negative. While countries can always agree to amend WTO rules or reach other international agreement to permit such competitiveness mechanisms, the more significantly these competitiveness mechanisms depart from current trade rules the more difficult it may be to reach consensus regarding needed changes to those rules.

III. Elements of a Consumption-Based Approach

Two elements of a consumption-based approach are discussed below: 1) A fee on excess emissions associated with goods consumed in the United States; and 2) A

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[20] Taxes were raised as needed under the ODC program to ensure environmental goals were being met. *See* Elizabeth Cook, ed., Ozone Protection in the United States: Elements of Success, World Resources Institute (Nov. 1996) at 42–43.

[21] Bali Action Plan, Decision 1/CP.13, FCCC/CP/2007/6/Add.1* (Dec. 2007) at para. 1(a).

[22] *See* GATT Art. III:2 and *Ad Note* Art. XVI. For an example of the application of these principles to permit the border adjustability of an environmental tax, *see* GATT Panel Report, *United States—Taxes on Petroleum and Certain Imported Substances*, BISD 34S/136, adopted on June 17, 1987.

[23] *See, e.g.*, Gary Clyde Hufbauer, Steve Charnovitz, and Jisun Kim, Global Warming and the World Trading System, Peterson Institute for International Economics (Mar. 2009).

program to spur consumer demand for more efficient vehicles. As noted above, the varying needs of different sectors may justify a variety of approaches for addressing climate change. These comments are intended to suggest some elements of a program, and not to exclude other approaches.

1) Excess Emissions Fee

A key element of a consumption-based approach would be the imposition of a fee on each ton of excess emissions associated with goods consumed in the U.S., whether those goods are of domestic or foreign origin. There are strong arguments for imposing a uniform emissions fee that would apply to excess emissions from all sectors in the economy, including electricity generation. The fee would operate in a manner similar to value-added taxes, putting a price on excess emissions at each stage of the production process. The amount of those fees borne by manufactured goods could be adjusted at the border by rebating them on exports and assessing them on imports. This would ensure that manufacturers' costs related to both their direct and indirect emissions do not create a competitive disadvantage.

However, an emissions fee could also be targeted specifically to manufacturing, while implementing a broader cap-and-trade program for other large emissions sources such as electricity generators and fuel suppliers. A separate program could be carved out specifically for manufacturing that would assess border-adjustable fees on industrial emissions, and manufacturers subject to the fees would be exempt from the requirements of the cap-and-trade program.[24]

An emissions fee would be assessed on manufacturers based on the tons of greenhouse gases they emit each year. By creating a cost for excess emissions, the fee would incentivize firms to adopt the most cost-effective emissions abatement technologies. An administratively determined fee rate would also provide more cost predictability to producers than a volatile market for emissions allowances, allowing producers in capital-intensive industries to plan ahead more effectively for investments in technology upgrades and emissions reductions. Any such fee should be structured to minimize costs to industry and maximize emissions reductions.

- First, producers emitting below a certain threshold each year would be exempt from the fee. The threshold could be set to only cover producers that account for a significant portion of emissions.
- Second, the fee could apply only to emissions that exceed a set quantity, and this level can decline over time. A floor below which no fees are assessed could be structured in a manner similar to a cap on emissions in a cap-and-trade program. Thus, producers who maintain emissions at current levels initially and gradually reduce them within the prescribed timeline would pay no fees.
- Third, the base rate of the fee per ton of excess emissions can rise gradually over time to increase the economic incentive to reduce emissions. Even if the fee rate needs to be adjusted later in time to ensure emissions targets are being met or to respond to new scientific or environmental developments, the fee still provides more predictability to manufacturers than a trading market for allowances.
- Fourth, proceeds from the fees can be recycled back to the industry in the form of tax credits or other assistance to reward firms that reduce emissions more quickly and/or to help finance the acquisition of emissions abatement technology, worker training, and other transition costs.

A major advantage of the emissions fee is that it can apply equally to both domestically-produced and imported goods. The fee could also be rebated on exports, eliminating the competitive disadvantage U.S. goods would face abroad. To rebate the emissions fee on exports, producers that have any fee liability at the end of the year can report the portion of their emissions that were generated by production for export and deduct a proportional amount from the fees owed. Any such export deductions would be subject to verification. There are several methods that could be used to assess an emissions fee on imports.

- First, the fee would be assessed on all imports regardless of origin and based solely on the emissions associated with the imported good. The emissions fee

[24] Under such an approach, manufacturers may still bear additional costs in the form of higher energy prices that are not reflected in the tax. Additional steps would then need to be taken to alleviate any disadvantage imposed on manufacturers due to higher energy costs. Such steps may include credits for manufacturers to compensate for higher energy costs and/or a system that includes a proxy for costs associated with such indirect emissions in the import assessments described above.

would apply to any import that generates emissions above a *de minimis* level, including downstream products.

- Second, the base rate of the fee per ton of emissions associated with imports would be equal to the base rate of the fee per ton of domestic emissions. Thus, the amount of the fee would increase over time to strengthen the incentive for emissions reductions.
- Third, adjustments to the import assessment can be made to account for the fact that the fee is only assessed on U.S. emissions that exceed a certain level.
- Fourth, to determine the amount of emissions generated by imported products, regulators could establish a greenhouse gas intensity rate for foreign industries. The intensity rate could be further refined down to a product-specific basis depending on the sector and on administrative feasibility.[25]
- Finally, a process could be created whereby an importer could apply to demonstrate that the emissions generated by specific merchandise are lower than the standard intensity rate for the country of origin (resulting in a lower assessment).[26] Similarly, other interested domestic parties should have the ability to apply to demonstrate that the actual emissions generated by specific merchandise are higher than the standard rate for the country of origin (resulting in a higher assessment).

2) Creating Demand for More Efficient Vehicles

Another element of a consumption-based approach would be a program to stimulate demand for new, more fuel-efficient cars or for the retrofitting of existing vehicles to make them more fuel efficient. Transportation is a significant source of GHG emissions in the United States.[27] As of 2001, there were 20 million cars and 15 million trucks on the road that were 15 years old or older.[28] While there are numerous ways to incentivize the production of more fuel-efficient cars, one way to do so would be to retrofit older and less efficient vehicles from the road and stimulate consumer demand for more efficient cars.

There are several approaches that could contribute to this goal. First, consistent with the emissions fee proposed above, a tax on gasoline that reflects carbon content and increases over time would lead consumers to demand more fuel-efficient cars. Second, vehicles themselves could be subject to a consumption or use tax based on their gas mileage. For existing cars already on the road, application of such a tax would encourage drivers to invest in retrofitting older cars or turning them in for more efficient vehicles. Third, current state-level exceptions to emissions testing requirements for older cars could be phased out over time to require all vehicles on the road to meet emissions standards. Finally, any of the approaches above could be combined with targeted assistance for drivers who lack the means to upgrade or exchange their current vehicles. Together, policies to stimulate and support demand for more efficient vehicles could dramatically alter the emissions profile of the transportation sector in the United States.

IV. Conclusion

The crisis of climate change demands solutions that address the global nature of the problem. Policies that focus on regulating the consumption of carbon-intensive goods rather than their production are much more likely to fulfill scientific objectives, improve environmental outcomes, maximize incentives for new technology development, and minimize economic costs, while honoring international trade rules and principles. Such consumption-based approaches have been used successfully in the past to address other global environmental challenges, such as the depletion of the ozone layer.

Regulating consumption by putting a price on GHG emissions has numerous advantages over regulating production by capping the quantity of GHG emissions. A consumption-based approach would cover more of the U.S. carbon footprint, treat all goods uniformly based solely on their associated emissions, ensure equal treatment of domestic and foreign goods, and cover downstream products made with carbon-intensive inputs. In addition, consumption-based approaches are likely to be more efficient, transparent, predictable, and flexible, providing significant economic and

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[25] As noted above, the import tax on ODCs is assessed on a ten-digit HTS level according to a standard ODC weight for the product determined on the basis of the predominant method of manufacturing for that product. *See* 26 C.F.R. § 52.4682–3(f)(6).

[26] This process could incorporate elements of the foreign manufacturer letters that importers are required to present in order to be exempt from taxes on imports of ODCs. *See* 26 C.F.R. § 52.4682–3(e).

[27] U.S. Department of Energy, Transportation Energy Data Book, Edition 27 (2008) at Table 11.5.

[28] *Id*. at Tables 3.7 and 3.8.

environmental benefits. Finally, a consumption-based approach will permit developing countries to pursue common but differentiated emissions reduction commitments without putting developed country industries at an unfair disadvantage, all while honoring international trade rules and principles.

Elements of a consumption-based approach to combating climate change could include a fee on excess emissions associated with goods consumed in the United States and programs to stimulate consumer demand for more efficient technologies and products.

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